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SOCIAL SCIENCES

# DISTRIBUTION MAGAZINE

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DECEMBER, 1953

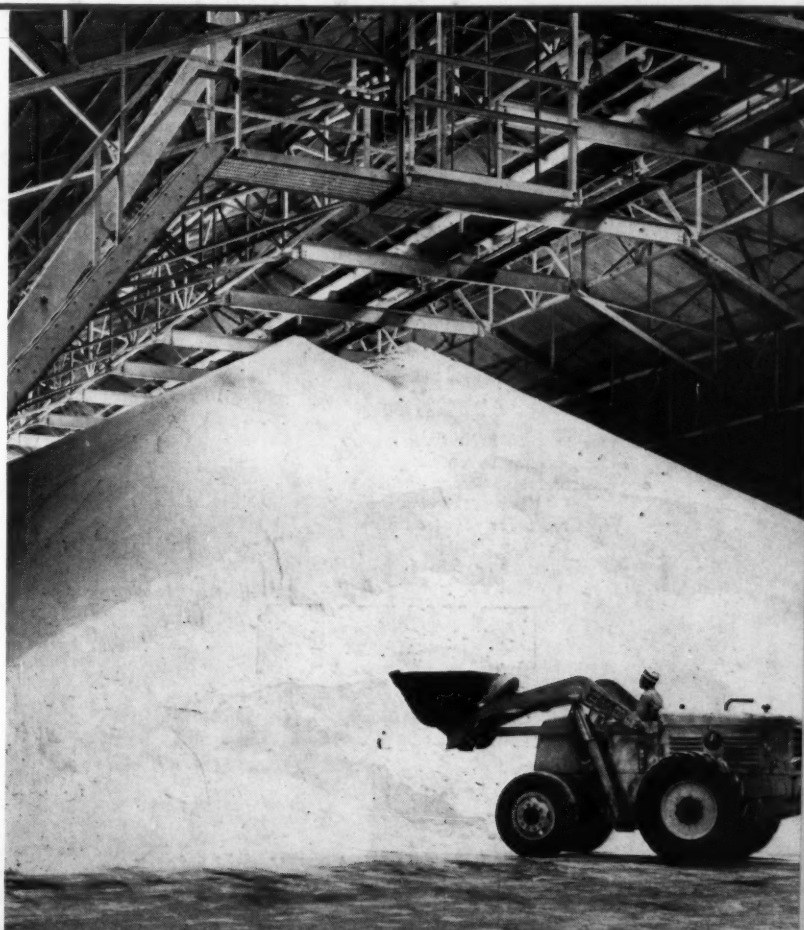
MATERIALS HANDLING, TRANSPORTATION, WAREHOUSING

## In This Issue

### MECHANIZED WAREHOUSE

The Central of Georgia Railway has speeded operations and cut its labor force 58 per cent with a new mechanized warehouse for nitrate of soda import at Savannah, Ga. Since ships can be unloaded faster than bagging speed, excess must be warehoused. Scene at right shows one of six bulk movers which feed bagging operation in warehouse at a speed of 150 ton an hour. . . .

See Page 18.



In 2014

## Other Features

- Atmospheric Influence On Storage Space
- Pallet Vault Makes Handling History

★ Contents  
★ Page 3

# LESS DOWN TIME More Profit Time

## BUDA LIFT TRUCKS

STRIP FOR SERVICE IN 22 SECONDS...  
DISASSEMBLE COMPLETELY IN 22 MINUTES!



## BUDA "FT"

SERIES LIFT TRUCKS

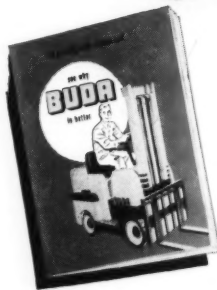
BREAK ALL

MAINTENANCE RECORDS

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See for yourself WHY Buda is the  
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economical and easiest to maintain  
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# BUDA

The Buda Company, Harvey, Illinois

Diesel and Gasoline Engines, Lifting Jacks, Railroad  
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Fork Lift Trucks

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Your Buda Fork Lift Truck will spend more time in operation... less time dead-lined for service, maintenance or repairs. From the all-welded, automotive type frame to the easily removed side panels and engine cowl, every component is designed for speedy, efficient servicing. It takes one man only 22 seconds to strip the truck for service, and one man only 22 minutes for complete disassembly! Clutch replacement takes approximately 30 minutes. But fast assembly and disassembly are only part of the "more-profit-time" story. Buda builds these new FT Lift Trucks so that parts last longer and need little or no attention. Buda's amazing 85% part interchangeability between various models keeps stock inventory to the minimum, too. Be sure to compare Buda before you buy. Thirty-six models to choose from—

18 Diesel and 18 gasoline.

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**BURGLAR ALARM SERVICE  
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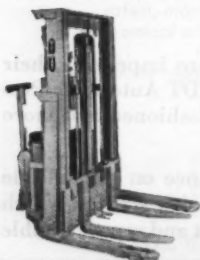
# MOTO-TRUC

## *Service-ability*



GOOD truck maintenance begins right in your own plant. The quick service features of MOTO-TRUC mean less down time . . . Less cost to you for repairs. Get the complete facts on the truck that offers the utmost in trouble-free operation . . . and remember . . . THERE'S A MOTO-TRUC FOR EVERY PURPOSE. Send for Bulletin No. 53.

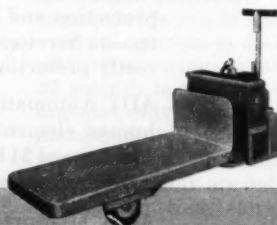
**Hi-lift "Walkie" type**  
3000-4000 lbs. capacity



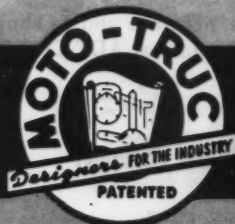
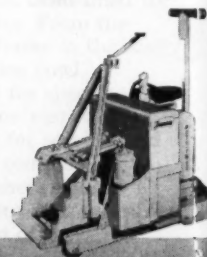
**Pallet type "Walkie" truck**  
4000-6000 lbs. capacity



**Platform "Walkie" type**  
4,000-10,000 lbs. capacity



**Grip-All Tractor**



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DECEMBER, 1953

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# IT'S NEW!

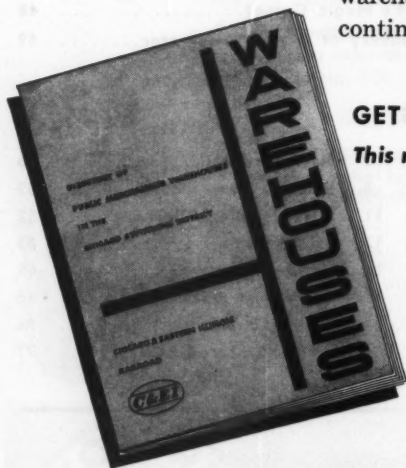
## Directory of WAREHOUSES IN CHICAGO

Now, for the first time, shippers can have in one book all important information on Chicago warehouse facilities in **DIRECTORY OF PUBLIC MERCHANDISE WAREHOUSES IN THE CHICAGO SWITCHING DISTRICT.**

This directory—containing up-to-date facts for a quick analysis and selection of suitable storage space—has been prepared as a public service by **CHICAGO & EASTERN ILLINOIS RAILROAD.**

Detailed information on all 128 public merchandise warehouses in the Chicago Switching District, including the 95 with rail service, is conveniently tabulated to assist in locating space where it has become increasingly scarce. Locations are keyed to a map which indicates for each warehouse, its rail service, size classification, and kinds of merchandise stored. Switching charges between warehouses and industries in the district are tabulated.

The directory, prepared with the co-operation of warehouses and warehouse associations, is another of the continuing C&EI services to business and industry.



### GET THESE FACTS ON 128 CHICAGO PUBLIC WAREHOUSES

*This new reference book—available to you without charge—includes:*

- Warehouse names, addresses and telephone numbers.
- Kinds of commodities stored.
- Amount of licensed public storage space.
- Materials handling equipment.
- Railroad and switching services available.
- Descriptions of buildings.
- Fire and pilferage protection.
- Insurance rates on goods stored.
- Special services performed on goods handled.
- Map of Chicago Switching District.
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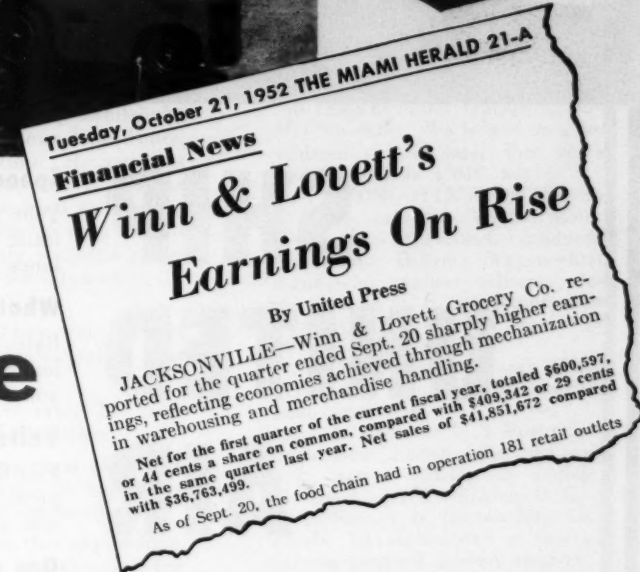




# How To Make More Money

THIS NEWS CLIPPING suggests one way to make more money. Winn & Lovett's "sharply higher earnings" prove that a dollar saved is *still* a dollar earned.

"Mechanization" saved more than 50% of Winn & Lovett's handling bill. "Mechanization" in this case means a fleet of CLARK fork trucks and towing tractors, operated on a well-planned schedule. These



savings, together with increased retail volume and retail operating improvements, resulted in "sharply higher earnings," and the company made financial headlines.

The moral of this story is this:

Call in your local CLARK dealer to discuss ways to cut handling costs. That's what Winn & Lovett did, and look what happened!

**CLARK  
EQUIPMENT**

Industrial Truck Division  
**CLARK EQUIPMENT COMPANY**  
Battle Creek 11, Michigan

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## **Speed can make your business prosper!**

Your products get to market, supplies come in faster when you specify shipment via United Air Lines Air Freight.

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Whatever your shipping problem may be, you can save money, time and labor by counting on United Air Lines. For a free analysis of your specific problems, contact your nearest United office or write: United Air Lines, Air Freight Department, 5959 S. Cicero Ave., Chicago 38, Ill.



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PARCEL POST • PASSENGERS**

### **How to be Quintuplets**

Last week, the president of a major company readjusted his full schedule to fit in our unexpected visit. In itself, that was considerate, but what followed was exemplary of the highest standard of business management.

After a few minutes of interesting conversation, he said he liked to share his visits with important people (Thank you, Sir!) with his "quintuplets." This caught us off base but we snapped right back when he touched a button on his intercom and summoned his line executives. Little did we know what a treat was in store for us.

The introductions were not a perfunctory, limp handshake affair. For instance: "We'd like you to meet our Tom Jones. He's vice president in charge of distribution. He cut our transportation costs by 13 per cent last year and is shaving more off this year. Some of the means he used to achieve these results was a complete modernization of our freight handling facilities, he disposed of our costly regional warehouses and got us a good deal with public warehouses . . ." And so on. Masterful psychology!

We listened to five such introductions. They were formal in nature, yet there was an air of quiet informality that instilled respect and admiration.

What followed was a press conference in reverse. The men plied us with solid business and technical questions.

Our turn to ask questions came later—as each executive conducted a tour through his bailiwick. However, each tour was preceded by a conference with department heads.

When leaving we commented favorably on this experience. It was then we were told that this was part of "Training for the President's Job" program. Each man was training to take over his superior's job when the occasion would arise.

Of this we are sure: Here there are no autocratic or decadent department heads blocking the progress of worthy staffers; no "goldbrick" staffers.

When you are overloaded with work, do you ever wish you were quintuplets? Well, sir, treat your men as if they were your real "quints." Train them to be as good as you are. Keep them well informed. Have them meet people; take them to association meetings. Broadcast their achievements—the right men will keep you well supplied with new accomplishments to talk about.

Admittedly, it takes a good man—one bigger than his present job and not afraid of losing it—to develop such a staff. If you're it, it won't take long for the results to show. The cream always rises to the top!

### **Yakkety Yak**

The trucking industry celebrated "50 Years of Motor Transportation" Mid-November. We helped, in a bewildered sort of way. Five years ago we did it in a BIG way!

. . . FORGOTTEN FACTS? In 1898, 55 years ago, Winton Motor Carriage Co., Cleveland, introduced the Winton Delivery Wagon—first commercial gasoline delivery vehicle made in U. S. In October that year, Winton had eight trucks on its "production line."

. . . That year, Pittsburgh Motor Vehicle Co., granddaddy of Autocar, went commercial.

. . . In 1899, the U. S. Post Office Department started collecting mail with motor vehicles in Buffalo, Cleveland, and Washington, D. C.

. . . Same year, Duryea Mfg. Co., Peoria, Ill., introduced a line of gasoline-powered delivery wagons.

. . . By 1902—a year before the currently celebrated birthday of motor transportation—there were several magazines devoted to the new industry. Four of them, all Chilton publications, still are in existence; albeit with changed names, such as DA. One of these conducted a survey on truck driver training and maintenance problems.

. . . Also in 1902, semi-trailers were heralded, and Morgan Truck Co., Worcester, Mass., introduced the "world's largest truck"—a 10-ton job.

. . . Looks like everybody is out of step but DA! Anyway, boys, best wishes on your 50th Anniversary. We guess the truck is here to stay.



Editor



# How MEAD POKE-PAK\*

works to cut costs  
for those who receive  
goods in multiwall bags



MEAD CHESTNUT POKE-PAK bags, ready for immediate use.

MEAD CHESTNUT POKE-PAK bags, ready for immediate use.



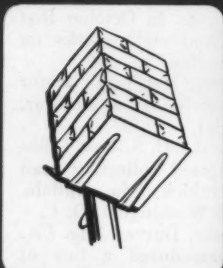
Poke-Pak is light in weight—easy to handle.



Load is secured with non-tear adhesive.



Load is secured with interlocking pattern.



Load is securely fitted as a unit.



Long narrow slits are cut and straight, the top seam.



Bags are easily separated without damage.



MEAD CHESTNUT POKE-PAK bags, ready for immediate use.

These advantages will save you money from the day you begin receiving loads unitized on MEAD CHESTNUT POKE-PAK. Over the business year, they will add up to substantial gains from lessened claims, and demurrage, faster release of unloading facilities, easier and more accurate inventory taking, cleaner plant. If you receive materials in multiwall bags, there is no surer economy than to unitize on POKE-PAK. Write for an illustrated folder on the advantages of MEAD CHESTNUT POKE-PAK.

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# LETTERS TO THE EDITOR

## Better Distribution

To The Editor:

I am much interested in the very comprehensive article by Mr. Charles A. Herrmann in the September issue of *DISTRIBUTION AGE* (Page 22) entitled, "The Solution To Better Distribution." Would it be possible to obtain several reprints of this article?

George H. Russel, Manager  
Administrative Department  
General Traffic Office

Ford Motor Co.  
Detroit, Mich.

Reprints of Mr. Herrmann's article have been forwarded to Mr. Russel. A limited supply of extra copies are available for those who missed the story in our September issue.—Ed.

## Tags on Taxes

To The Editor:

Several years ago we received from you a pamphlet entitled "Keeping Tabs on Taxes in the 48 States" revised to Jan. 1, 1944, by John H. Frederick. Is there a later revision?

L. F. Foster  
Associate Director

Massachusetts Warehousemen's Assoc., Boston, Mass.

"Keeping Tabs on Taxes" was discontinued in 1944. At that time, the war-time paper shortage made its publication prohibitive. In addition, the limited number of changes required with each revision did not seem to warrant yearly issue. However, DA is considering a re-issue. If enough interest is shown, we will make every effort to bring the pamphlet up to date.—Ed.

## Fork Truck Specs

To The Editor:

Please accept my thanks for DA Specifications of Industrial Trucks.

Unfortunately, none of us have time enough to comprehensively accumulate the information compiled in the Specification summary by *DISTRIBUTION AGE*, regardless of how much it is needed. To me, such a summary is most helpful and it will prove helpful to the management of the Warehousing Industry. It is indeed a pleasure to note the forethought and contribution by *DISTRIBUTION AGE* to fill an essential need of the industry.

A. R. Current  
Sales Manager

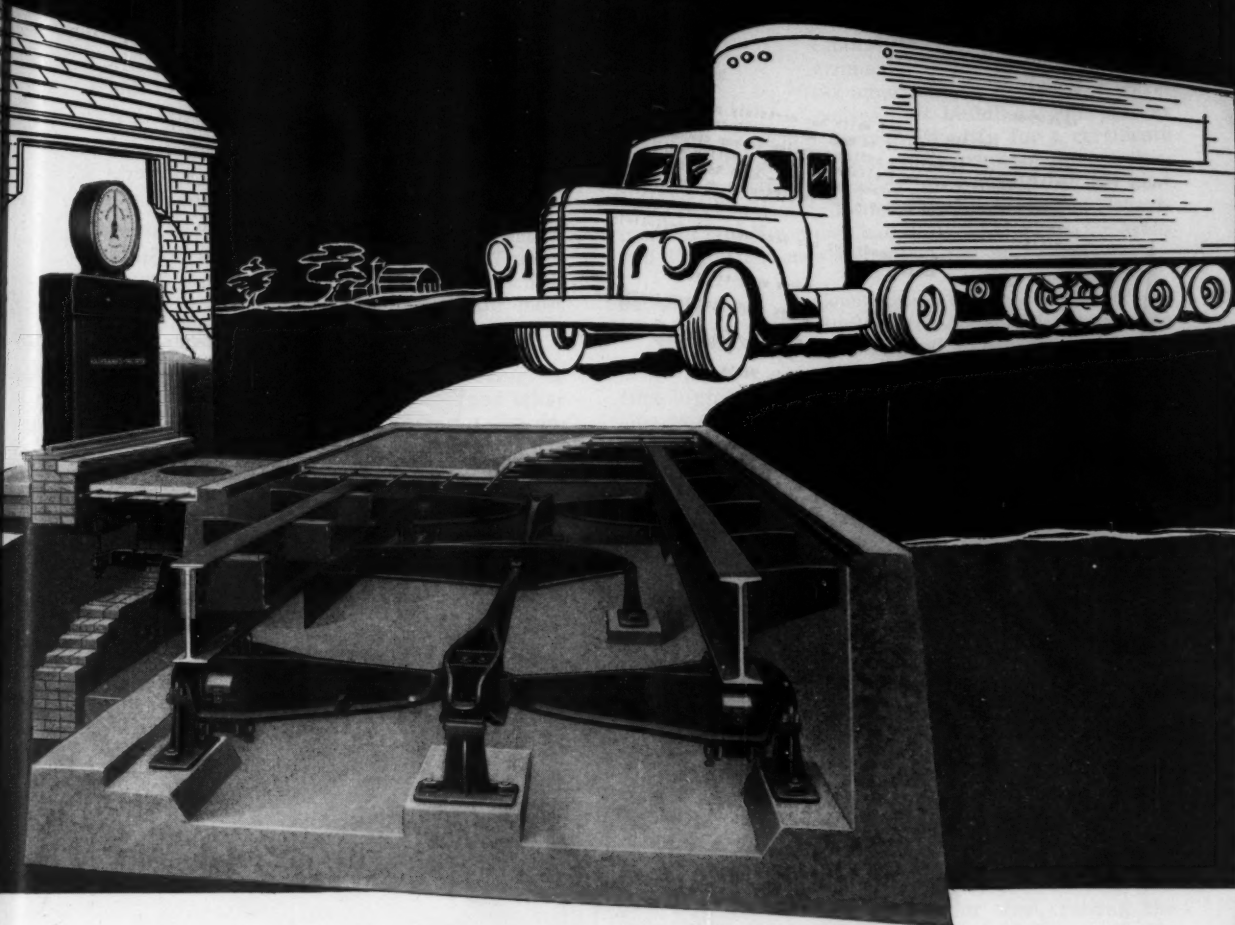
City Products Corp.  
Chicago 3, Ill.

A limited supply of the Specifications Bulletins are still available at 50¢ a copy.—Ed.

DISTRIBUTION AGE



# ...this truck scale doesn't shock easily!



Sudden starts and stops . . . heavily loaded trucks of all types . . . constant rocking action—this Fairbanks-Morse Type "S" Truck Scale takes all these conditions in stride!

The Parallel Link Suspension feature assures sustained accuracy. It absorbs shock loads . . . assures free movement of the weigh bridge in any direction without transferring horizontal thrust to the vital scale levers—they cannot be disturbed

or moved from their correct position.

Unlike ordinary truck scales, bearing blocks cannot rock on knife edges when the suspension links swing away from the perpendicular. See your local Fairbanks-Morse Scale Specialist about these Type "S" Truck Scales with Parallel Link Suspension . . . and the others in the broad Fairbanks-Morse line . . . or write Fairbanks, Morse & Co., Chicago 5, Illinois.



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CRATING, PACKING, SHIPPING, LOCAL DELIVERY, LONG DISTANCE HAULING  
AGENT ALLIED VAN LINES

BILLINGS, MONTANA

April 30, 1953

Billings White Truck Company  
Billings  
Montana

Gentlemen:

Our new 3022 PLT White has certainly proved out everything you claimed it to be. We have cut down our delivery time as well as adding prestige to our company, and the drivers are well pleased with its handling and maneuverability. Our entire operation - both nation-wide and into Canada and Mexico - has been stepped up in efficiency.

When we are ready for our next unit, it definitely will be another White.

Yours very truly,

WHITE LINE TRANSFER & STORAGE CO.

*R. F. Hanly*  
R. F. Hanly, Owner

RFH:Lm

## It's the same story Everywhere!

THERE'S no reason why you can't have the same earning power ... the same efficiency ... that has been the talk of the industry, from coast to coast.

The White 3000 sets a "earning" standard wherever it goes. Look what happened when the White 3000 moved into the White Line Transfer & Storage Co., Billings, Montana. Why not see your White Representative without delay for facts about its application for extra earning power in your business.



HERE'S the new White Model 3022 PLT with sleeper cab that is rolling up the miles for White Line Transfer & Storage Co., Billings, Montana. R. F. Hanley says this modern van travels 100,000 miles a year.



## THE WHITE MOTOR COMPANY

Cleveland 1, Ohio

For More Than 50 Years The Greatest Name In Trucks

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# Washington **DA**

By Karl Rannells, *Chilton Washington News Bureau*

## **Social Security**

Talk has been increasing that Congress will act early next year to postpone the scheduled increase in the social security tax rate, due to become effective next Jan. 1. Unless Congress acts, the present withholding of 1½ per cent on the first \$3,600 of employee income (to be matched by the employer) will increase to 2 per cent (3 per cent for self-employed). Numerous congressmen up for reelection next year are realizing that this additional \$17 withholding will wipe out most of the savings from scheduled 10 per cent reduction in income taxes for most wage earners getting up to \$71 a week.

## **Alaskan Pipeline**

Military services are moving to guarantee supply of fuel and other oil to the Alaskan interior for defense purposes. A contract has been let for the construction of 610-mile, 8-in. pipeline which will run from the seaboard near Haines to Fairbanks. Army spokesmen expect the construction work to get under way this year, to be completed not later than September 1955. Cost will run to about \$29 million.

## **Shipbuilding Restrictions**

Government restrictions on building merchant vessels for foreign customers have been relaxed, but the ban on using these vessels for trade with Soviet-bloc nations still exists. Maritime Administration must still approve ownership and the agency continues to require assurance that ships to be built will not carry cargoes to and from Iron Curtain ports.

## **Freight Car Expansion**

Railroads face the unhappy situation of having to step up freight car orders voluntarily or running the chance of having the government tell them they must increase the operating fleet by a specific number of units. DTA believes the railroads should have at least 1,850,000 cars on hand, ready for use, by next July. Railroads don't see it this way, and so far this year have placed fewer orders than the retirement rate of 5000 units monthly. They now have an operating fleet of 1,775,000 units and are not alarmed by being 75,000 short of the DTA goal.

## **Parcel Post**

Retail groups generally are storing up ammunition for a drive on Congress when it convenes to get former parcel post sizes and weights restored. Unexpected help will come from small shipper groups. Latest word from a congressional committee which has the bill on ice is that no hearings have actually been requested. But this picture is likely to change. Demands will be quick in coming when the session opens.

## **Fast Tax Write-offs**

Changes have been made in the government's policy for allowing fast tax amortization. Builders of warehouses, loft buildings, and similar facilities who could normally qualify for a certificate will now be able to get a higher percentage of costs certified by locating in a major labor surplus (6 per cent or more chronically unemployed) area. Labor Department in mid-November had designated 17 major areas and 22 smaller ones as critical regions.

## **Building Activity**

Construction of warehouse, loft and similar projects is setting the pace for a stepped up rate of building activity which will reach a new, all-time high of close to \$35 billion for the year. Expansion rate for storage and similar facilities has been 39 per cent greater than last year. Warehouse and loft construction put into place during the first 10 months of 1953 amounted to nearly \$600 million.

## **Military Manpower**

Earlier government plans for slowing down on draft calls, easing industry's manpower problems, now seem to be on the way to the scrap pile. Draft calls are expected to remain at the 23,000 monthly level till spring. It is likely that induction rate may then go up to around 37,500, and perhaps to 45,000 for last half 1954.

## **Capitol Briefs**

The Railway Express Agency will continue its arrangement with major railroads for handling express traffic for another 20 years. A new contract has been signed, with approval of the ICC, to run until 1974.

... Southern railroads have put into effect a new carload minimum weight rate for steel, raising the alternative minimum from 60,000 to 80,000 pounds, to meet growing competition from trucks.

... Mailings of the first day covers for the trucking commemorative stamp broke all previous records for special stamps. More than 800,000 were mailed.

... Technical experts were scheduled to meet in Los Angeles last month, 400 strong, to discuss packaging methods for shipping and storing "guided missiles."

... Organizers for the teamsters union will embark upon an indefinite drive to bring warehouse workers under the wing of AFL's International Brotherhood of Teamsters, and will spend a large sum on the effort.

... Although the military is the big aircraft buyer, reports indicate that at least 4,700 units were ordered during first half 1953 for the civil transport and utility fields.

... Talk is that considerable pressure will be brought on Congress to pass legislation next year which will clear up the status of freight-absorption activities by manufacturers.



North...  
South...  
East...  
West



...every Christmas  
wish that's best!

**BRANCH MOTOR EXPRESS COMPANY**

EXECUTIVE OFFICES -- 455 WEST 16TH STREET, NEW YORK CITY



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# Chuting the NEWS

## Conveyor Equipment Manufacturers Elect R. F. Tomlinson President

R. F. Tomlinson, manager, Conveyor Department, The Oliver Corporation, A. B. Farquhar Division, York, Pa., was elected president of the Conveyor Equipment Manufacturers Association at its 20th annual meeting at the Greenbrier, White Sulphur Springs, W. Va.

Jervis C. Webb, president, Jervis B. Webb Company, Detroit, was elected vice president; E. E. Borge, sales manager, Standard Conveyor Co., North St. Paul, Minn., treasurer; and Russell B. Maas, president, Screw Conveyor Corporation, Hammond, Ind., secretary.

Directors are: Mr. Davis, Fred S. Wells, vice president, Stephens-Adamson Manufacturing Company, Aurora, Ill., and D. E. Davidson, vice president for sales, Link-Belt Company, Chicago.

R. C. Sollenberger was re-elected executive vice president to continue as staff head of the Association with headquarters in Washington, D. C.

Fred S. Wells, vice president, Stephens-Adamson Manufacturing Company, was appointed chairman of an education committee to handle industry cooperation with engineering schools.

## New Diesel Engine, Exhaust Noises, Topics of National SAE Meetings

Three national meetings of the Society of Automotive Engineers convened at Chicago's Conrad Hilton Hotel, the National Transportation Meeting Nov. 2-4, the National Diesel Engine Meeting Nov. 3-4 and the National Fuels and Lubricants Meeting Nov. 4-6.

Board chairman R. E. Wilson, Standard Oil Co. (Ind.), Chicago, was toastmaster, and J. T. Retallia, president of Illinois Institute of Technology, Chicago, and SAE president Robert Cass, The White Motor Co., Cleveland, Ohio, spoke at a joint dinner of SAE members Nov. 4.

A symposium on progress in curbing exhaust noises of commercial vehicles was a feature of the Transportation Meeting, which also learned the advantages of applying power steering to trucks and air springs for buses. Design and development of a new diesel engine which reduces fuel consumption 15-20 per cent was described at the Diesel Engine Meeting. The Fuels & Lubricants Meeting reports included cooperative tests of motor fuels requirements of post-war cars and experiences with propane-fueled buses on urban routes.

(Please Turn Page)



Westinghouse "Automation" Display Coach Visited by 3,500: On a nationwide tour of 350 plants, the coach shows how common electrical devices such as line-starters, control stations, motors and circuit breakers can be used to achieve successful automation

## Smith Named Director

Earl B. Smith, vice president and director of traffic, General Mills, Inc., Minneapolis, Minn., has succeeded Kenneth L. Vore, director of transportation, Department of Defense. Vore has announced his resignation to take a position in private industry.

## Coming Events

Dec. 7-12—Motor Carrier Management Training Program, Michigan State College, East Lansing, Mich.

Dec. 10-11—National Conference on Highway Financing, Shoreham Hotel, Washington, D. C.

Dec. 15—MHI Annual Meeting, Hotel Statler, N. Y., N. Y.

Jan. 11-13—Truck-Trailer Mfrs. Assn., Annual Convention, Boca Raton Hotel, Boca Raton, Fla.

Jan. 11-15—SAE, Annual Meeting, Sheraton-

Cadillac and Statler Hotels, Detroit, Mich.

Jan. 25-28—Plant Maintenance Show, International Amphitheatre, Chicago, Ill.

Jan. 28-29—National Council of Private Motor Truck Owners, Inc. (15th Annual Meeting), Chicago, Ill.

Feb. 1-5—Frozen Food Packers Convention, Hotel Commodore, New York, N. Y.

Feb. 14-18—National Furniture Warehousemen's Association Annual Convention, New Orleans, La.

Feb. 17-19—National Transport Vehicle

Show & Fleet Maintenance Exposition, New York, N. Y.

Feb. 17-19—White House Conference on Highway Safety, Washington, D. C.

Feb. 21-27—National Frozen Food Merchandising Convention and Exposition, 71st Regiment Armory, New York, N. Y.

Apr. 25-29—AWA 63rd Annual Meeting, Boca Raton Hotel and Club, Boca Raton, Fla.

May 4-6—5th Highway Transportation Congress, NHUC, Mayflower Hotel, Washington, D. C.

## ... Chuting the News

(Continued from Preceding Page)

### NITL Elects A. H. Brown New President

The National Industrial Traffic League, at its annual meeting held at the Jung Hotel, New Orleans, La., Nov. 19-20, elected the following officers: president, A. H. Brown, transportation commissioner, The Cleveland Chamber of Commerce, Cleveland, Ohio; vice-president, Lowe P. Siddons, traffic manager, Holly Sugar Corp., Colorado Springs, Colo.; treasurer, Grant Arnold, general traffic manager, E. J. Lavino & Co., Philadelphia.

A joint meeting of the railroads' administrative committee and the

cooperating committee of the NITL on tariff simplification met Nov. 13 at Birmingham, Ala., to act on proposals of the Railroads' Tariff Research Group.

John W. Peters, traffic manager, Delco-Remy Division, General Motors Corp., guest speaker for the evening, discussed the interrelation of industry and the railroads in the development of Birmingham as an industrial center, and reviewed the many activities in which shippers and railroads had cooperated for improvement of railroad service.

—DA—

### Standardization Seminar

Dr. John Gaillard, mechanical engineer, staff of the American Standards Association, and lecturer at Columbia University, will hold his next five-day private seminar on industrial standardization Jan. 25-29, 1954, in the Engineering Societies Building, 29 West 39 Street, New York City.

The January, 1954, session will consist of ten conferences, one in the morning, 9.30-12.00, and one in the afternoon, 1.30-4.00.

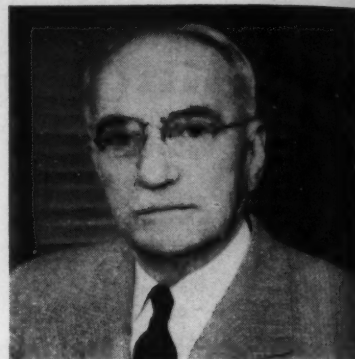
—DA—

### Truck Owners To Meet

Dr. R. E. Wilson, chairman of the board, Standard Oil Co. of Indiana, will speak at the opening luncheon of the 15th Annual Meeting of the National Council of Private Motor Truck Owners, Inc., to be held at the Conrad Hilton Hotel, Chicago, Jan. 28-29. Clem D. Johnston, vice-president of the Chamber of Commerce of the United States and chairman of the national "Project Adequate Roads" committee, will speak the second day.



Address Opening of Traffic Classes in N. J.: Evening courses in traffic and transportation started in New Brunswick, Nov. 4, through the cooperation of the Academy of Advanced Traffic, New York, N. Y., the New Brunswick (N. J.) Public Schools and the Central New Jersey Chapter of the Delta Nu Alpha Transportation Fraternity. Front Row, (l. to r.) John Tracey, executive vice pres., Delta Nu Alpha; E. Albert Owens, Dean of the Academy; Maurice Rowland, supt. of schools, New Brunswick; Edward Lorincz, pres., Central N. J. chapter of DNA; Kenneth Harper, principal, New Brunswick Evening School, and Charles Trayford, regional vice president, DNA. Rear Row, George Olsen, director, Jersey City Traffic Bureau; De Wayne Nelson, Middlesex County Industrial Commissioner; William Conover, traffic assistant, Parmacel Tape Corp.; Maurice W. Houghton, commercial agent, Mid-States Freight Lines; Jack Jolley, traffic manager, Chicopee Mfg. Corp.



Carl Dietz, President  
Lamson Corp. of Delaware

### Lamson Buys Mobilift; Offers Integrated Line

Lamson Corp. announced the acquisition Nov. 1, 1953, of the fork lift truck business of Mobilift Corp., Portland, Oregon. A new Oregon subsidiary, Lamson Mobilift Corp., will carry on this fifteen-year-old business as an integral part of the Lamson line of materials handling equipment.

The Mobilift assets that Lamson acquires include all the equipment, machinery, and inventory at the Company's manufacturing plants at Portland, Oregon, and at its five sales, service, and parts branches at Berkeley, Cal.; Dallas, Tex.; Chicago, Ill.; Atlanta, Ga.; and Rutherford, N. J. The Mobilift nationwide dealer organization and sales force located at national industrial centers throughout the country will be continued.

A long-range development program will be carried forward whereby the basic series of Mobilift trucks will be expanded to increase the capacity range, and will be fitted with either hydraulic or chain lift mechanisms and pneumatic tires. This expansion program will give Lamson Mobilift a full line of fork lift trucks up to about 4,500 lb capacity.

—DA—

International Harvester Co. has become a member of the ATA Foundation through which industry suppliers promote the services of trucking to the American people. The company contributed \$50,000 to the foundation.



College Courses in Fleet Maintenance Management Made Possible at 19 U. S. Colleges by White Motor Grant: Prof. Amos E. Neyhart (center), originator of the course at Pennsylvania State College's Institute of Public Safety, is adapting the course and preparing a new manual with his staff (l. to r.), D. A. Weaver of the Institute of Public Safety, coordinator; Prof. Neyhart, administrative head; George V. Deal and Joseph Intorre. Not shown is J. Willard Lord, formerly of the Atlantic Refining Co., one of the consultants working with the staff in forming the course material

## Jack B. Cole, Jr., Elected ATA President; Highway Problem Key Topic of 20th Convention

Jack B. Cole, Jr., president, Jack B. Cole Co., Birmingham, Ala., was elected president of the ATA at its 20th annual convention in San Francisco, commemorating the Golden Anniversary of Trucking. He succeeds Walter F. Carey, president of Automobile Carriers, Inc., Flint, Mich., new chairman of the board of directors.

Neil J. Curry, president of California Cartage Co., Los Angeles, was elected first vice-president; C. J. Williams, president of Hillside Transit Co., Milwaukee, Wis., second vice-president; A. E. Cudlipp, vice-president and director of Lufkin Foundry & Machine Co., Lufkin, Tex., third vice-president; and Richard A. Moran, of the W. J. Halloran Companies, Providence, R. I., fourth vice-president. Reelected were George V. Eastes, treasurer, and Chester G. Moore, secretary.

### Special Stamp Issued

An attendance of 2,500 persons, the largest in ATA history, registered for the convention. At a luncheon meeting, Postmaster General Arthur E. Summerfield presented to ATA past presidents and other top officials albums containing a special stamp issued by the Post Office Department in honor of the 50th anniversary of the nation's trucking industry.

Speaker at the luncheon was Dave Beck, general president, International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers, AFL.

Among other speakers at the convention were John C. Allen, Assistant Postmaster General in charge of the Post Office Department's Bureau of Transportation; J. L. McCaffery, president of International Harvester Co.; J. W. Sinclair, superintendent of transportation, Union Oil Co. of California; Major General Frank D. Merrill (U.S.A. retired), leader of "Merrill's Marauders" in World War II, and commissioner of the New Hampshire department of public works and highways; J. Hugh Jackson, dean of the graduate school of business of Stanford University; and Charles Coburn, movie and television actor.

### Highway Problem

The highway problem and its related problems of sizes and weights, taxation and safety, and economy of operation has prompted the establishment of a staff of field research representatives of the ATA to assist the affiliated state associations on a regional scale, announced Walter F. Carey, retiring president of ATA. He stated the national campaign for  
(Please Turn to Page 50)

# MEN

## IN THE NEWS

### Materials Handling



Stuart D. Nelson (left)—appointed export sales manager and George A. Hinckley (right)—appointed sales manager by Automatic Transportation Co.



R. G. Thibaut (left)—appointed service manager and C. W. Raby (right)—appointed assistant service manager, Thew Shovel Co.

Raymond A. Bixby—named sales manager, Service Recorder Co. He succeeds Edward L. Viets, who is retiring.



D. A. Milligan —appointed vice president in charge of sales, American Tractor Corp., formerly with Harry Ferguson, Inc.

O. T. Henkle, Jr.—moved from the post of vice president-sales to executive vice president, Mercury Manufacturing Co. P. K. McCullough—formerly vice president-manufacturing is now vice president-sales. J. D. Appleberry—former assistant to McCullough has been named plant manager.



E. W. Spannhake —mechanical engineer and named director, engineering & research, Le Tourneau - Westinghouse Co.

William H. Campbell—elected treasurer and assistant secretary, Elwell-Parker Electric Co., formerly of Midland Steel.

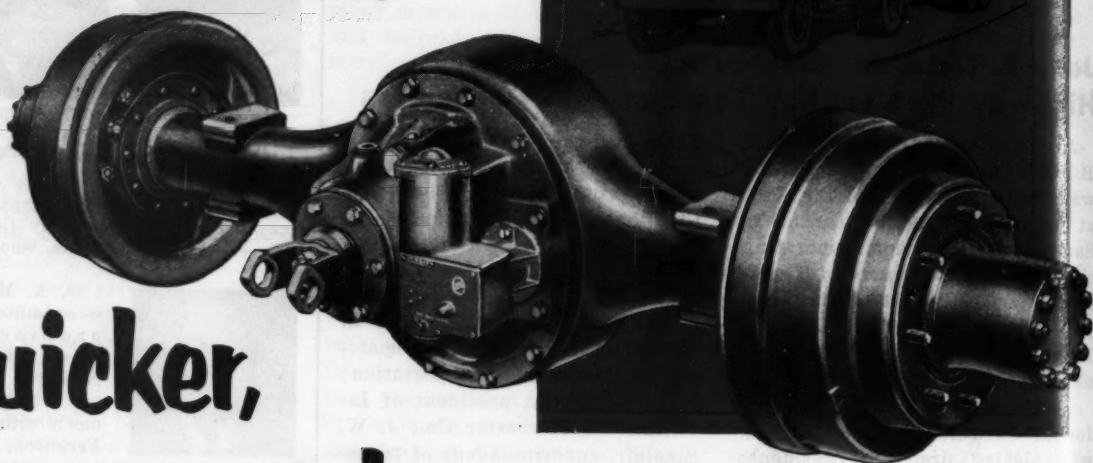


### Packing & Packaging

R. C. Wilson—named manager-engineering of the newly established  
(Please Turn to Page 50)



**Performance Records\* prove  
Eaton 2-Speed  
Axle trucks  
haul more,**



**quicker,  
longer, at lower cost, are  
worth more when**

**\* More than a million-and-a-half  
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Circle No. 11 on Card, Page 34, for more information



## Why So Little Data On Distribution Costs?

**Only 24% of Industry Survey participants know their distribution costs. This represents a gain of 11% in six and one-half years**

**S**MALL but encouraging gains in the fundamental distribution cost accounting concept are indicated in the latest DISTRIBUTION AGE Industry Survey.

This observation is based on facts obtained from a similar survey conducted by DA six and a half years ago. At that time, information obtained from the participants in the survey was very discouraging and showed a surprising lack of understanding of the factors comprising the cost of physical distribution.

For example, only 13 per cent of the respondents were able to supply even partial cost data on the eight factors shown below. Of that group, only 27.27 per cent had all the answers.

Current figures show a 24 per cent response to the question. That hardly can be considered good but it does represent an 11 per cent gain over the 1947 study. Of this number, only 36.65 per cent had all the answers. Again, the number is woefully small but it also shows a gain of 9.38 per cent.

Analysis of these figures raises some serious questions. Is the problem one of sloppy bookkeeping or is it a fundamental lack of understanding, on top management level, of what constitutes distribution costing?

We cannot accept either of these points as a logical answer. No business, certainly none of the large

companies represented in this study, could get by with a sloppy bookkeeping system. As for the factors constituting distribution costing, they have been fully explained in past DA articles.

The finger points to, and it's pressing hard on the nose of, industry's top executives. Too many, perhaps the majority, have not yet come to regard the physical movement of goods as an integrated operation.

For example, in many plants the traffic department's responsibility is confined to the shipping and warehousing of finished goods. Receiving and warehousing of raw goods is being handled by the purchasing agent, intraplant transportation and packing is supervised by the production department, and the control of regional stocks is a sales department function.

Such a split of distribution functions only leads to confusion, inefficiency and buck-passing. It certainly makes it difficult to get a single figure, or an intelligent breakdown, of distribution costs—the last frontier of cost reduction.

Knowledge of true distribution costs also can place a firm in a favorable position competitively. Entering, as we are, a shift from a sellers' to a buyers' market, these facts may mean the difference between profit and loss.

The following tabulation summarizes current cost data.

Materials Handling .....	06.75%
Transportation .....	40.10%
Finance .....	07.80%
Insurance .....	02.50%
Packing and Packaging .....	13.00%
Warehousing .....	11.50%
Marketing .....	21.80%
Service and Maintenance .....	03.25%

These figures represent an adjusted median of all figures obtained. As a result, they do not add up to an even 100 per cent.

An attempt also was made to obtain some comparison of costs with the 1947 survey to determine to what extent the above costs represent an increase or decrease over the previous figures. Twenty per cent of the respondents had no means of making the comparison. The balance, except for a few cases, represents estimates.

Materials Handling .....	30.00%
Transportation .....	51.25%
Finance .....	10.00%
Insurance .....	15.00%
Packing and Packaging .....	17.50%
Warehousing .....	17.50%
Marketing .....	10.00%
Service and Maintenance .....	10.00%

These figures represent medians of the percentages supplied.

A note of caution must be expressed about all of the figures published. They must be considered as a sample, rather than a sampling of all industry, because of the small number of participants. It's the best available until future distribution cost systems and future surveys bring better results. •



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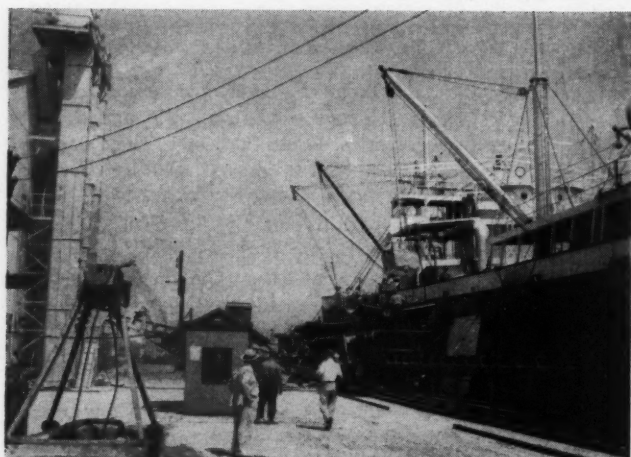
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Six hoppers on marginal dock pass nitrate over weighing machine to bucket elevators which lift material 45 ft onto rubber belt conveyor, which runs the entire length of the new warehouse

When ship is unloaded, bagging machines are fed direct from ship by use of rail-mounted trimmers via hoppers on both sides of belt. Here a trimmer, shooting a stream of nitrate, is shown at work



**M**ECHANIZED equipment is making possible the bagging and loading of 40 carloads a day of nitrate of soda for fertilizer use at the new 120- by 510-ft steel and concrete, \$1 million dockside warehouse of the Central of Georgia Railway, at Savannah, Ga.

Since cargoes from Chile run 11,000 ton or more, ship unloading goes faster than the bagging and loading equipment. The surplus is stored in the warehouse, which has 60,000 tons capacity. Thus several ships' cargoes will provide enough nitrate of soda for a steady bagging operation during the fertilizer season.

Installation of the modern and efficient equipment for handling fertilizer material from ship's tackle into warehouse has saved the labor of seven men.

In the old warehouse, which was destroyed by fire, 12 men were required to do the work now being done by five. This includes the entire operation from ship's tackle to point of rest in the warehouse or to bagging machines.

The equipment has been designed to dispatch a maximum of 600 tons an hour, although the two double bagging machines will handle only 1,200 tons in an 8-hour day, or 150 tons an hour.

The warehouse is of steel truss framework without a pillar or post or piece of wood in it. It has been specially designed to withstand high winds. The floors and walls are of reinforced concrete with the roof and canopies transite covered.●

By C. E. Wright

# Nitrate Import

Complete mechanization, from ship's tackle to the warehouse, has resulted in a 58 per cent labor saving in this import operation

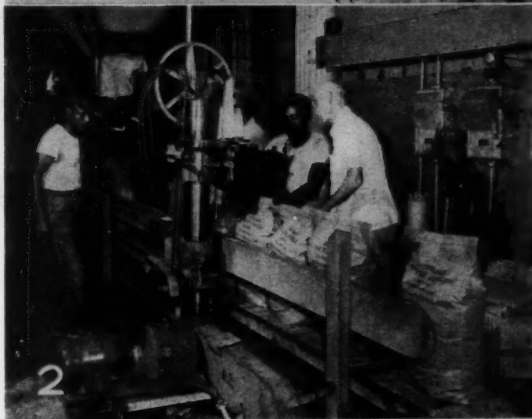
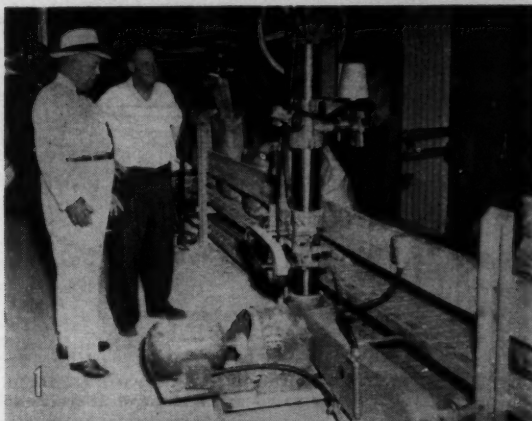
1. Four bagging machines, operated in tandem, can bag 15 100-lb bags a minute. Filled bags, unstitched, pass from bagging machine onto conveyor system to the stitching machine. Bags are conveyed at the rate of 140 fpm

2. Bags are top-stitched at same rate of speed. Five-ply bags come from small warehouse across the tracks via slanted conveyor which passes over roof of standing cars. One operator in warehouse runs conveyor by push-button

3. Conveyor from bagging machine takes filled bags to 20 chutes ranged along car loading dock, which drops bags to four double Flexoveyors. Flexoveyors are rubber-tired, have differential drive, operate under own power

4. One conveyor duplex machine can load an 800-bag box car in 54 minutes. Two men stack in car. The machines stretch from bottom to chutes to ends of the box cars, are adjustable for loading in any part of car

Below. As ship can be unloaded faster than bagging machine capacity, any overage from 11,000-ton cargo is piled on warehouse floor. From here four Payloaders feed machines. Bagging speed is 150 tons an hour





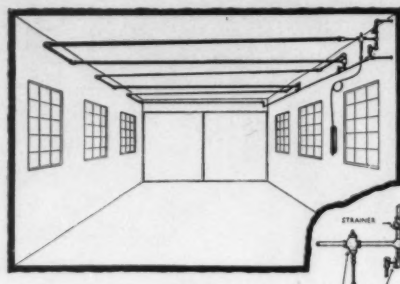


Fig. 1. Overhead pipework for storage room with self-actuated room control thermostat

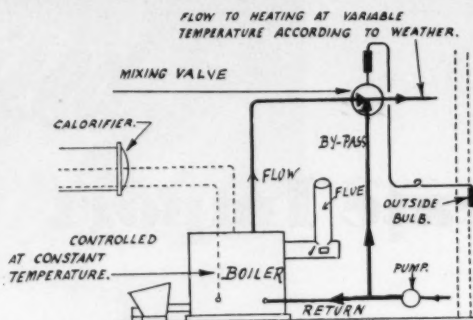


Fig. 2. Simple weather control from outside thermostat of hot water boiler for heating

## Atmospheric Influence On

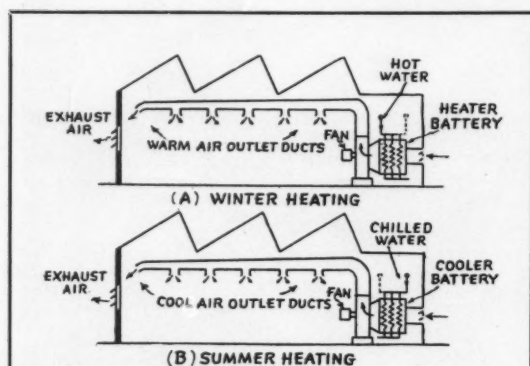
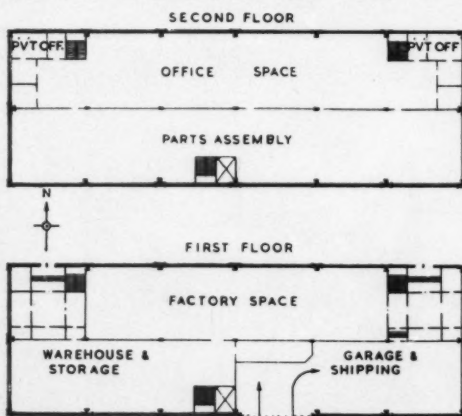


Fig. 3. Floor type unit heater and cooler for year-around use in warehouse or factory space

Fig. 4. Zone temperature control for two-story factory building with warehouse, storage space



### Modern temperature and humidity control

**S**TORING of goods in warehouses requires controlled conditions of air temperature and humidity, to avoid deterioration. In older buildings and in some new warehouses the means for achieving storage at reasonably steady air conditions are still somewhat primitive.

Control of relative humidity often is not considered at all, so that during the summer months a hot humid atmosphere prevails in the storage space.

#### Modern Developments

Modern developments of heating and ventilating systems for the winter months, of cooling apparatus for hot summer months, and all-year round air conditioning plants of compact size make it easy to have controlled air conditions in a warehouse. Another modern development is chemical air dryers, using solid or liquid adsorbents for water vapor.

#### Heating and Ventilating

Choice of the system depends on local circumstances. In some instances a simple over-head pipework as shown in Fig. 1 might suffice. Here room temperature is controlled by a simple self-actuated room thermostat.

In another case a stoker or oil-fired boiler can be installed serving hot water radiators in the building, and using a circulation pump for hot water supply to the heating surfaces.

Modern developments suggest the use of inside-outside control of flow water temperature, portrayed

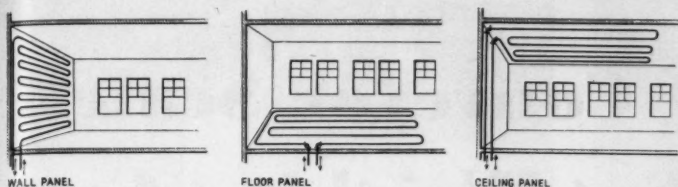
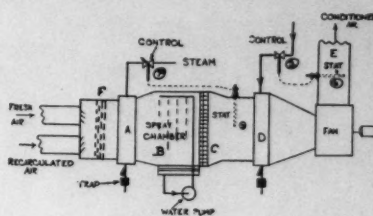


Fig. 5 (Above) Radiant heating is recommended in warehouses. Although best installed in new buildings, it is possible to convert old houses

Fig. 6. (Above, right) Simple method of dew-point humidity control is shown. Temperature is controlled by thermostat behind eliminator plates

Fig. 7. (Right) One of the best means of modernizing a warehouse by providing year-around control is through use of packaged type unit shown



By Leo Walter

## Storage Space

help prevent dampness and deterioration

in Fig. 2, whereby an outside temperature bulb regulates internal space temperature in accordance with outside (weather) conditions.

Local conditions might in another instance suggest installation of a heater battery, fed from a packaged steam boiler, in a small outside annex to a warehouse. Warm air at desired temperature is supplied through air ducting and evenly distributed through the storage space.

In another instance, the use of unit heaters may be preferable, which can act during hot summer months, see Fig. 3. A packaged oil-fired fully auto-

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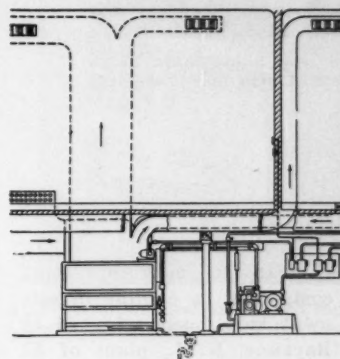


Fig. 8. Vertical floor type has filter, fan, heating and cooling coils

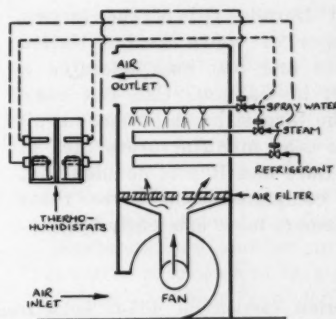


Fig. 10. Central air conditioning plant with air recirculation: plan

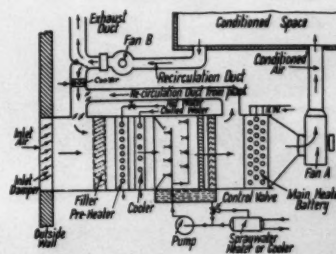
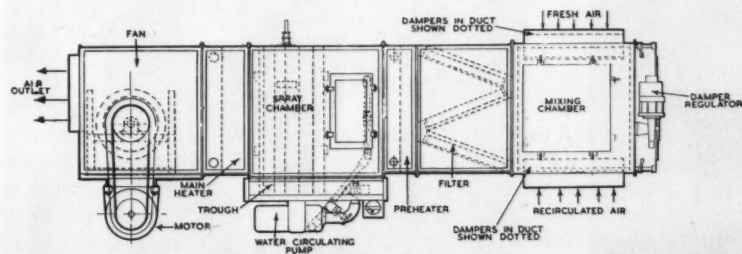
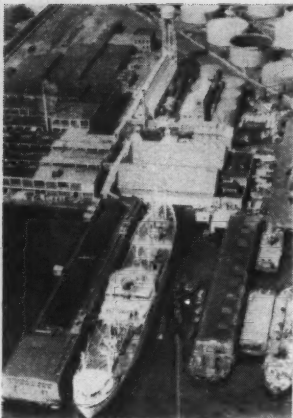


Fig. 9. A horizontal type unit air conditioner is shown here in outside view and diagrammatically. Elements contained are same as in vertical unit





From ship holds copra drops to pair of belts and is weighed

# Conveyor Scales Cut Weighing Costs

Low power consumption, continuous operation without an attendant, split lots easily handled, an instantaneous reading on the rate of flow and the total weight run

**S**AVINGS in both operating costs and in capital investment have been achieved at the Bayonne, N. J., plant of El Dorado Oil Works through use of three conveyor scales to weigh copra, soybeans and other products.

El Dorado Oil is the largest crusher of copra in the United States and has long operated a plant in Oakland, Cal. But some of the largest users of coconut oil (like soap manufacturers) are in the East and it was decided that the company could serve these customers more efficiently by ship-

ping the raw materials directly to the East coast for processing.

Accordingly, a new plant was constructed at Bayonne and put into service in February, 1950, to extract oil from copra from the Philippines, from soy beans.

## Accurate Weighing

Accurate weighing of the coconut meat is highly important since weight on arrival is the basis for payment and copra is a valuable product, selling at \$200 to \$300 a ton. At Oakland, the weighing is done with big hopper scales which occupy a large building and re-

quire constant attendance during operation. In an effort to improve weighing efficiency and at the same time reduce costs, the company determined to use conveyor scales at Bayonne.

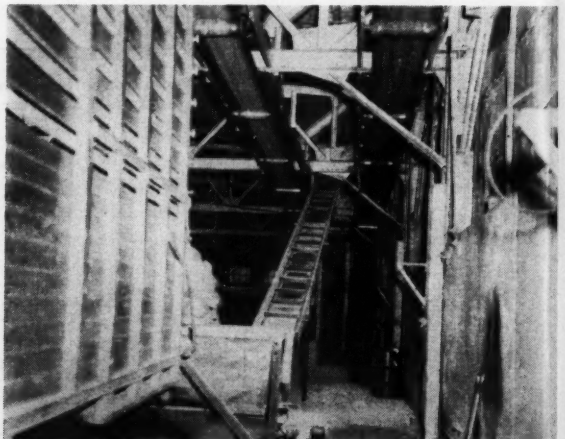
A 485-ft pier was constructed capable of handling large freighters with cargo as large as 6,000 ton of copra. Average cargo handled is 1,500 ton. Two Sutorbilt cars run on tracks which extend the full length of the pier roof.

In each car are two 150-hp motors powering suction fans which draw the copra up from the ship holds through a pair of 8-in. hoses.

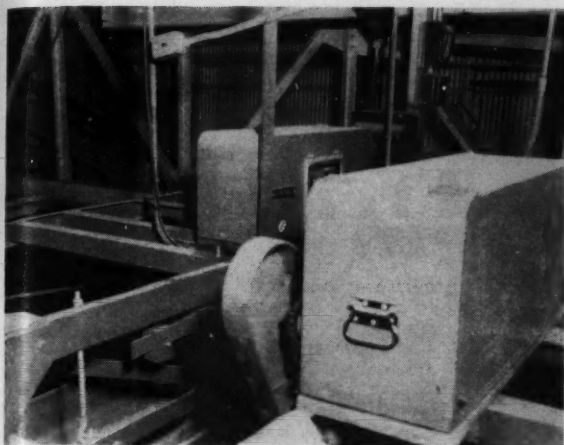
Materials carried on 455-ft belts from the right drop down on the shorter belts which carry them past scales



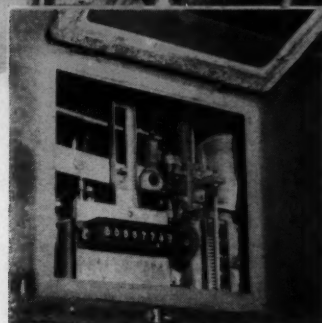
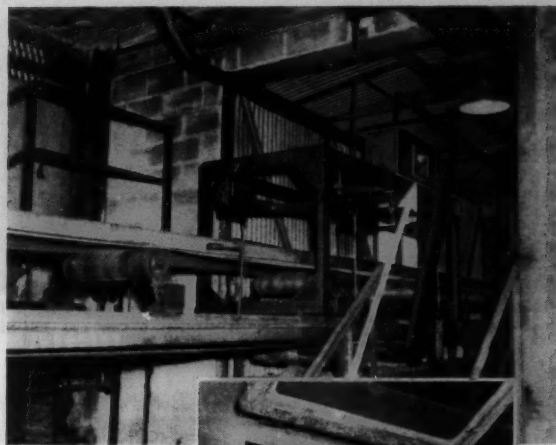
The two compact scales can handle a combined total of 200 tons of copra per hour without attending operator







Separate conveyor carries soybeans from truck up to the big belts which discharge to smaller belts for weighing



Scale shows total weight and the percentage of the load being run

The copra is then discharged by gravity through chutes located every 10 ft along the top of the pier to a pair of long conveyor belts. Each belt extends 455 ft, is 24 in. wide and  $\frac{3}{8}$  in. thick.

#### Compact and Simple Design

The copra drops off the end of the big belts to a pair of shorter conveyor belts which carry the material past the two Fairbanks-Morse conveyor scales.

The rollers supporting one section of the small belt are suspended from the scale. The weight of the material carried by the belt causes the rim of a small wheel to move into a position on the face of an inverted cone that corresponds to the weight of the material.

The cone revolves in a definite ratio to the speed of the conveyor belt. The revolving cone drives, by friction, the small wheel, on which is located a contact. Although the cone turns at constant speed the small wheel turns at varying speeds depending on its position in relationship to the diameter of the cone which drives it.

The more weight on the belt the larger the diameter of the cone in contact with the wheel. The faster the wheel turns, the more contacts it makes and each contact represents a definite amount of weight. Thus, the weight carried past the

scale by the belt directly controls the speed of the weight recording wheel.

Each of the scales is capable of weighing 100 ton of material an hour and remains accurate over a wide range of loads.

The first major advantage of the conveyor scale was the saving in initial cost, installation and space. Also the conveyor unit permits continuous operation without an operator in attendance. The conveyor unit gives an instantaneous reading both on rate of flow and on total weight run.

Split lots are easy to handle for it is possible to take a reading at the end of one lot and start immediately to run the next lot. Power consumption is very low since the material is lifted only once to the top of the pier and moves laterally and downward till it reaches the storage bins.

To complete the picture of operations at Bayonne, the copra moves from the scales past electromagnets which remove any iron particles, then into a hopper to drags which distribute the materials in the two 6,000-ton bins.

As required for processing, the copra is moved by screw conveyors, drag, bucket elevator and belt to a third conveyor scale which discharges into a surge bin which feeds the 13 expellers. The third

scale is used to provide immediate data on plant production.

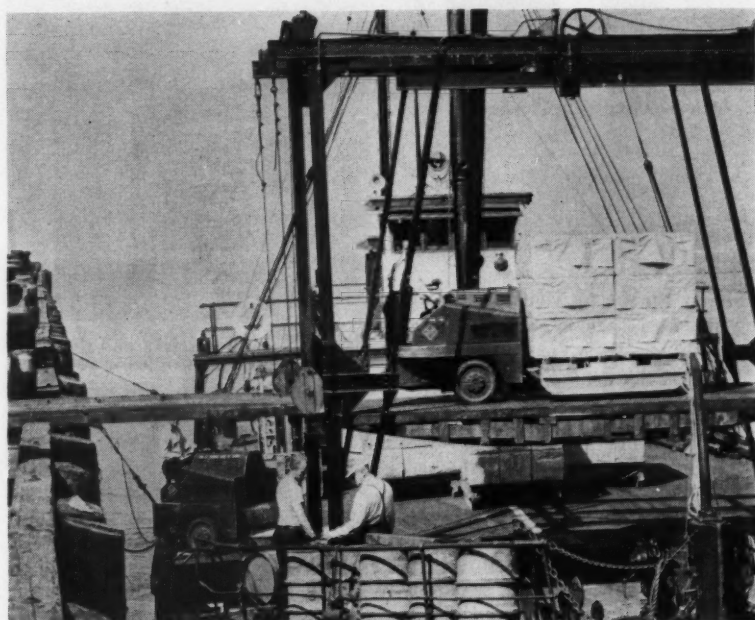
The expellers crush the copra and remove most of the coconut oil. The meal goes on to an extraction process where additional oil is recovered by means of a solvent solution. The meal is bagged and sold as coconut meal for feed.

Soybeans are another product regularly processed at this plant. To date, this has been delivered wholly by truck and, in order to use the same conveyor scales for weighing, a conveyor was installed inside the pier to raise the soybeans from the trucks on the pier floor up to the big belts which feed the scales.

Through the winter months, it is expected that one scale will work eight hours a day on soybeans. Copra receipts hold steady at about 3,000 ton a month the year around. The plant production scale has the largest work schedule, remaining in operation 24 hours a day, 5 to 7 days a week. Maintenance work on the conveyor scales is negligible.\*

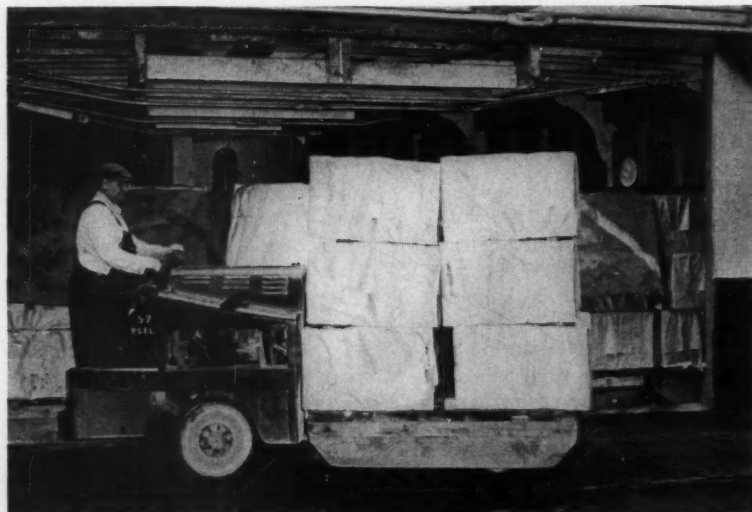


Baled pulp is picked up by a low-lift platform type truck for transfer to the ship's elevator. All pulp loads are skidded



To the wharf's edge, across the gangplank, then onto the ship's elevator. As shown, two machines can work effectively in the PSFL pulp loading operation

In the ship's hold, an operator in a stand-up type lift truck moves the load from the elevator platform in preparation for storing the skids for shipment



## Freight Line

**P**UGET Sound Freight Lines Co. offers its customers portal-to-portal cargo handling service through the use of a unique "sea-going" materials handling fleet.

A battery of three platform trucks, two low-lift and one high-lift, accompanies each of the firm's five vessels as they ply the inland waters of Puget Sound hauling general cargo.

With the sea-going platform trucks, PSFL is not dependent upon other firms to load and unload its commodities. PSFL provides the handling machinery to load at its customer's plants, transports the cargo to final destination via one or more of the five vessels, and unloads at the point of debarkation.

### Pulp Handling

Typical of the company's operations is the handling of baled pulp, as illustrated on these pages. Other goods handled includes cased beer, hardware, lime rock in bins, cased salmon and a variety of general freight. PSFL also operates a fleet of highway trucks throughout the state of Washington.

Each vessel handling baled pulp is equipped with a 10-ton capacity elevator. The elevator is used to raise and lower gasoline powered platform trucks with full loads to and from the ships' holds.

A majority of the loads are carried on 48 by 72-in. skids. The skids are moved from the docks to the ships, then carried to the elevator platform and lowered into the hold.

Because of tide variations, it is often necessary for the platform trucks to negotiate 12-deg ramps. When loading is complete, the

# Offers Portal-to-Portal Service

**By installing three platform trucks on each of its vessels working the Puget Sound, this firm has been able to handle all of its own loading and unloading**

three trucks ride with the vessel in the hold storage area. Upon arrival, the elevators and platform truck reverse their procedure for unloading.

All five boats are open hatched and well ventilated to avoid fire danger from the gasoline operated trucks. PSFL officials claim they

selected platform trucks for their system because the design facilitates operation within the limited confines of the ships' holds.

In many instances the trucks are called on to carry goods in aisles only slightly wider than the 48 by 72-in. skids, and to angle the loads in a 30-deg. arc.

Stand-up type trucks are used to give the operator more leeway in the low-headroom holds.

Since the trucks are comparatively light in weight, they are less conducive to damage to the fragile dock and deck surfaces, and permit maximum payloads on the ship's elevators. •

**Left: Platform trucks are ideal for travel in the tight confines of the holds, often maneuvering thru extremely narrow aisles**

**Below: Holds are completely filled, and the three Elwell-Parker trucks, one high-lift and two low-lift, ride with the shipment**







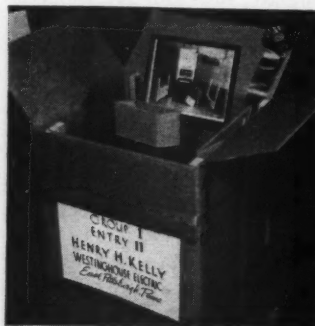
Earl Gustin, Bendix Aviation Corp., received Irving J. Stoller Award at SIPMHE banquet



K. Russell Colcord, United Aircraft Corp., receives the Harold Jackson Award trophy from Paul Paulsen of Wm. McGee & Co.

## The Experts Discuss Handling

Round-up of papers presented in Boston at SIPMHE Packaging and Handling Short Course



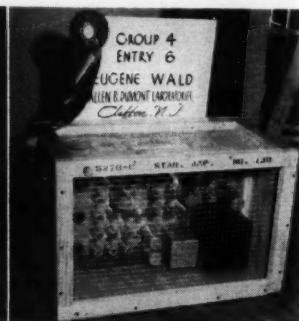
Group 1, won by Henry Kelly of Westinghouse Electric Co.



Right: Colcord took first place in "Nailed Wood Boxes and Crates" classification



Above, left: "Wirebound Boxes and Crates" was won by James B. Jones, Locke Department, General Electric Co.



Above, right: First prize in "Cleated Panel Boxes," was won by Eugene Wald, of Allen B. DuMont Laboratories, Inc.



Julius J. Puchy, Weston Electrical Instrument Corp., won first prize in Group 5, "General Classification," with this navigational aircraft instrument mechanism package display

This wirebound box, submitted by Alan Cohen, of Steiner Plastics Manufacturing Co., took first place in Group 6, devoted to "Export Containers." Costs 60 per cent less

W. H. Richardson, of the Driscoll Wire Co., won first prize in Group 7, "Materials Handling." His Pay-Off Barrel has reduced damage and corrosion to the strand materials

## and Packaging

**T**HIS YEAR'S Packaging and Materials Handling Short Course represented a new approach to this annual SIPMHE-sponsored educational feature conducted in conjunction with the packaging and handling exposition.

### Two Sections

The program was divided into two sections, one devoted to "Fundamentals of Packaging," the other to "Packing and Materials Handling — Advanced Executive Session."

Many of the papers presented at both sessions covered fields in which DISTRIBUTION AGE readers have shown considerable interest in the past. For this reason, three of the papers are excerpted below.

Space limitations prohibit the use of more of the papers in more detail in this issue. It is hoped, however, that some few of the

subjects can be covered in more detail in future issues.

(Editor's Note: Illustrations accompanying this article show prize winners in the annual competition, including two special awards and first place winners in the seven classifications.)

### Packaging and Handling Research Program

By Charles W. Smith

Associate Manager

McKinsey & Co., New York, N. Y.

When a company is large enough to have a packaging and materials handling engineer on its payroll, the problems involved in securing the cooperation of various line operating departments provide a basic reason for developing an integrated research program.

In smaller companies, the integrated research program is equally

important because it provides company executives with a basis for deciding when and how best to make use of the services of outside specialists (such as equipment salesmen and consultants).

Whether a company is large or small, however, the organization of an integrated program of packaging and material handling research involves essentially just three steps:

### The Three Steps

1. Define your company's packaging and materials handling problems in general terms, summarizing briefly what the company stands to gain from the solution of each problem. This advance size-up will provide company executives with a basis for deciding what research investment, if any, can profitably be made to solve each problem.

2. Once a decision has been made to undertake a particular research project, designate one responsible executive to administer the project. This executive should have sufficient authority to take whatever action is called for to develop a plan for conducting the study. Clearly establish at the outset who is to be responsible for reviewing and acting on any recommendations that result from the study.

3. Prepare a written project plan whenever a research project involves more than one company operating department, or requires the employment of outside specialists. Such a plan should state clearly the objectives of the study, the steps to be taken as precisely as possible, and the extent of responsibility of each participant. Whenever it is practical to estimate costs in advance, a tentative budget should be set up as a basis for controlling expenses.

### Integrated Approach

Stated simply, the integrated approach merely involves making sure that all aspects of a packaging or materials handling problem are considered so that any solution that is developed will be sound from an over-all, long-range company viewpoint.

(Please Turn to Page 56)

# Streamlined Inventory

## Speeds System, Simplifies



Card cabinets are located directly behind service desk. In this position they promote customer relations by making it easy to locate and price goods

**Elaborate card system paid for itself in less than three years, cut inventory time from four weeks to three days**

**A**LL EQUIPMENT necessary to set up a comprehensive inventory control system for the Soo Hardware Co., paid for itself before the system has been in operation three years. Only then did we realize the full potential available from this inventory control.

We have a large and diverse stock of merchandise in various

warehouses. Formerly, it was a practice to begin physical inventory as much as four weeks in advance of cut-off date. Each year after installation of the new system, we managed to cut the time and associated expense of physical inventory until at the end of three years it represented actual lost time of only two or three days.

Auditors claim that should we

so decide, it would be possible to maintain a running inventory throughout the year, in conjunction with our Remington Rand Kardex file, eliminating the necessity for a complete physical count at the year end. Not only would this spread the work over 12 months, but it would give a constant check on the accuracy of inventory records.

It takes an active inventory of more than 10,000 different items to properly service dealers and contractors throughout Upper Michigan and seven counties of Northern Wisconsin. We handle a wide range of merchandise falling into four categories:

1. Hardware and Automotive Supplies.
2. Plumbing and Heating Supplies.
3. Electrical Supplies.
4. Appliances.

The need for comprehensive inventory control became apparent after World War II, when the strain of an inflated economy with its attendant disruption of supply and distribution made it increasingly important to have up to date inventory information available.

Our original aim, therefore, in setting up the system, was to establish effective stock control. We were interested in two chief factors of control:

1. Maintaining balanced inventories, neither too large or so small as to impair customer service.
2. Providing a system whereby buyers and department heads could examine stock records and do their planning and ordering most rapidly and efficiently.

Previously it was necessary to make visual checks of stock in the



# s Control

By R. W. Fletcher, Jr.

Vice President & General Manager  
Soo Hardware Co., Marquette, Mich.



Arranging the storage bins at Soo Hardware Co. in the same order as the card file made for greater speed in inventory checks, and facilitated stock control

warehouse in conjunction with the use of rather incomplete inventory charts.

## Reference File

The new installation solved these problems within a comparatively short period. It provided a reference file which has been most valuable during the past several years, when business has experienced relatively high rates of employee turnover, and the necessity for training relatively inexperienced personnel to perform specialized jobs.

Other bonuses which have accrued since installing the system have been of great benefit to us in streamlining and improving the efficiency of our entire operations. For example, we learned early that to be really effective we must, insofar as possible, warehouse items in the same sequence they appear on the cards.

We devised a warehouse layout of bin stocks whereby items such as pipe fittings and bolts are stocked in individually labeled boxes on shelves, in the same sequence in which these items appear in the file.

This greatly simplified stock checking, and makes for a more flexible stocking arrangement, since items may be added or de-

ducted from lines without disrupting the sequence.

The first place to work is with the Kardex, setting up items in sequence with the proper stock numbers desired. It is virtually impossible to work backwards from an existing warehouse layout.

## Pricing Aid

Another extra is the pricing of merchandise at the time inventory control records are checked for the year-end inventory. This is done by routing all vendors' invoices to the file so that current prices can be maintained in the file.

With this complete price information available, it is possible for the inventory clerk to price customer orders as they are cleared through the file. The economy of making only a single reference for both the inventory and pricing operation is readily apparent.

Possibly the most important advantage of having the system, as it effects day-to-day contacts with our customers, is the fact that we are in a position to give current and accurate answers to telephone and counter trade inquiries for merchandise.

Formerly it was necessary when receiving a telephone inquiry to either call or walk out to the ware-

house, check stock, and call the customer back. In the case of customers coming into our warehouse, it was often necessary for them to accompany one of our people in the warehouse.

## Sales Analysis

A final important function is the critical analysis of sales possible. Space is provided on the cards for the entry of the number of units of any given item sold each calendar month. There is sufficient space for a period of 14 years.

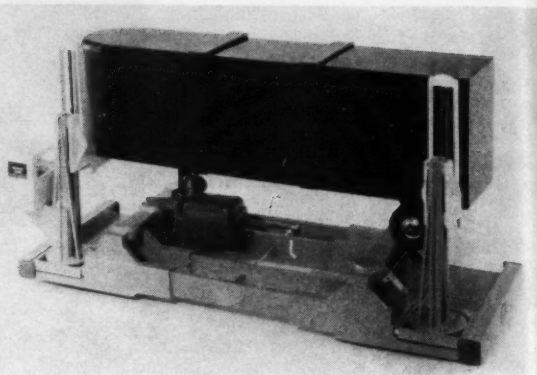
This history card provides us with a very graphic record of seasonal characteristics, and rising or falling sales trends, as well as giving us the actual volume of sales. Buyers and department heads can spot any changes that require corrective action or adjustment in their buying plans merely by studying the history cards.

Analysis of these history cards by lines of merchandise has indicated that certain lines have not been profitable. In some instances, after making a complete audit of all transactions within these lines, we have discontinued stocking them. This tends to ease our warehouse problems and increase stock turnover. •

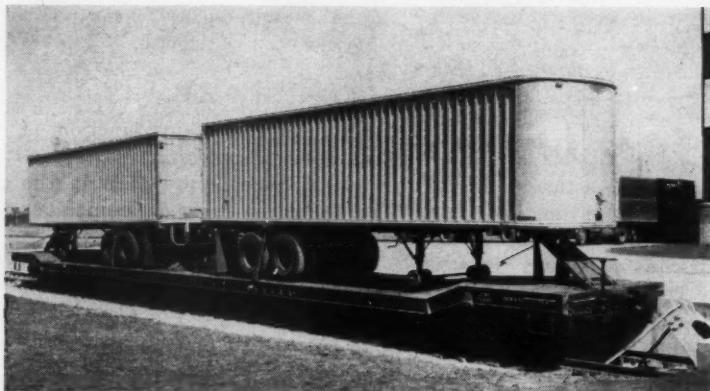
# Piggy-Back Plan Draws Mixed



Ross-built (Clark) truck has toed-in forks. Tilting mechanism was eliminated, towers strengthened for stability



Model of Baker-Lull lift truck shows how unit actually lifts trailer via forks and places it on the railroad flat car



Two 33-ft semi-trailers loaded on a General Motors Trailer Transport Car. All-welded flat car has depressed center sill, 132,000-lb capacity

Pullman-Standard's cushion underframe car is 75 ft long, accommodates two 35-ft trailers. Note lift truck designed for side loading trailers



**P**UBLICIZED variously as "one of the brightest hopes in the entire transportation picture" and "milestone in the movement of transportation," the rejuvenated highway trailer-on-flat-car plan seems to be drawing an increasing number of wet blanket observations from transportation experts.

In the face of these go-slow warnings, proponents of the plan can, and do, point to mushrooming interest in the piggy-back scheme. More and more rail and highway carriers are giving at least token consideration to the program.

## Fantastic Claims

Members of the wet-blanket fraternity mentioned above are quick to point out that they do not advocate scrapping the plan. They are suggesting, instead, soft pedalling of some of the fantastic claims being made in the name of piggy-back by newspapers and general circulation magazines.

They admit that the program has probable merit. They ask, how-

# Reaction

Although the highway trailer-on-flat car program is gaining favor in many quarters, some transportation experts are urging a more cautious approach



Southern Pacific recently launched piggy-back service for its own highway affiliate between Los Angeles and San Francisco

New York, New Haven and Hartford offers regularly scheduled service between New York and Boston and other eastern points



ever, for a more objective analysis of the situation. Claiming that the public is being coached to expect miracles, this element warns that such publicity can do the transportation industry more harm than good.

In order that DA readers might make their own analyses of the subject, presented below is a round-up type presentation of the situation as it stands at press time. The round-up includes pro and con arguments, a checklist and description of equipment and services developed for piggy-back use, a brief outline of individual programs now in effect, and a resume of the labor attitude toward piggy-back.

## Truckers' Attitude

Latest group to join the "slow down" brotherhood is the trucking industry itself. By resolution of its executive committee, the American Trucking Associations, Inc., meeting in Los Angeles last month declared that it views the piggy-back proposal with great interest, but with even greater alarm because of the unrestrained claims of highway congestion relief.

Pointing out that the plan is not as new as claimed, having been the subject of study and experiment for at least 15 years, ATA

expresses great doubt as to the potential value of the idea.

The trucking group did, however, give broad powers to a special committee to conduct an intensive investigation of current activities centering around the project.

The ATA stand centers around four principal objections:

1. Only a small number of the nation's nine million trucks could use rail transport, hence any relief of congestion will be minor.

2. Trucks shifted from road to rail would be the ones that pay the highest tax figures, constituting a disproportionately large part of the one-third that trucks now pay for highway use taxes.

3. Putting trailers on rail cars would weaken defense transport by increasing reliance on railroads, which have fixed trackage and yards most vulnerable to enemy air attack.

4. Combined hauling promises lengthy legal and regulatory tangles and complex effects upon truck and rail rate structures.

The ATA resolution and policy statement is, by and large, a summation of objections to the plan raised in other quarters.

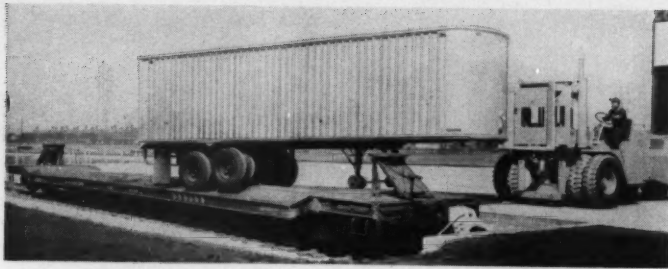
## ICC Clarification

The New York, New Haven and Hartford, a pioneer in the field which has offered the service since 1937 (DA, March, '53, Page 34), is seeking clarification of the regulatory or ICC angle.

The railroad filed a petition with the ICC to obtain a declaratory order answering 20 specific questions about the service. Principally, the questions seek to determine the railroad's right to decide who may use the service, methods of rate making, and the

(Please Turn Page)





Standard trailer being loaded on GM car by Clark's modified fork truck. Pin on toed-in forks engages the semi-trailer's towing plate

## Piggy-Back Plan . . .

(Continued from Preceding Page)



Adjustable struts fit into special lug on trailer, provide tie-down security

railroad's responsibility in commodity questions.

Another rate objection was presented last months in *DISTRIBUTION AGE* (November, Page 48) by A. F. Bowman, traffic manager, J. I. Case Co. Bowman charged rate discrimination against regular users of flat car service because the railroads are offering reduced rates to motor carriers. He also claimed that cars are being diverted from their intended use for piggy-back use.

### Those In Favor

James K. Knudson, ICC commissioner and DTA administrator, is the latest transportation authority

to join the parade of those speaking well of the plan.

Speaking at a meeting of the National Association of Shippers Advisory Boards in Omaha, Neb., in October, Knudson expressed a belief that much of the nation's highway congestion can be relieved by piggy-back through a system which should prove economically satisfactory to both the railroads and the trucking industry. Knudson also claimed that a satisfactory rate structure could be worked out.

Railroad officials who have spoken up in favor of the plan in recent months include Donald V. Fraser, president of the MKT; Charles A. Pinkerton, president of the Detroit and Macinac, and a host of others.

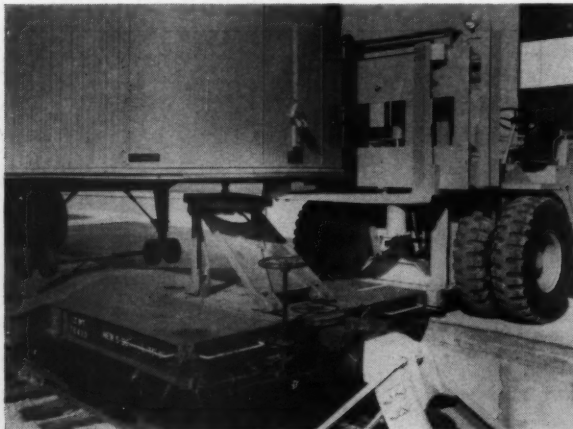
The obvious advantages of the plan, having been repeated many times in the trade and general circulation press, warrant only brief mention here.

Railroads are wooing the service for one principal reason: They see an additional source of revenue through redemption of much of the intercity traffic lost to trucks.

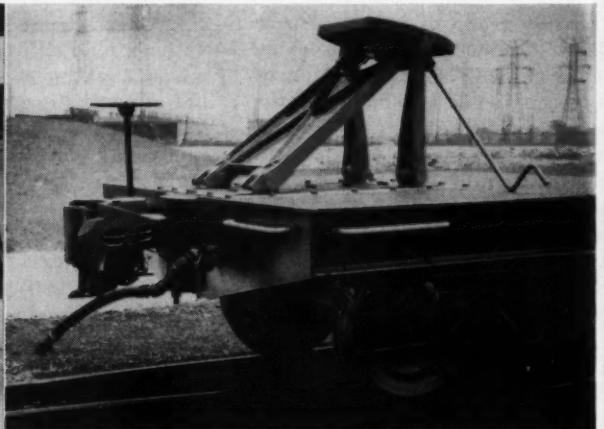
Truckers base their approval on three favorable prospects: Faster service between cities 300 miles or more apart, fixed (though not necessarily lower) charges for intercity traffic, and greater availability of power units.

(Please Turn to Page 58)

Hydraulic lift truck sets trailer kingpin in special slot in stanchion on rail car. Stanchions are at each end of car



Stanchions are equipped with rubber shock absorbers to allow trailers to move up to 4½ in. in each direction





# CLEARING HOUSE for industry problems

## This Month's Problem: Dirty Cars

M. M. Rose, chairman of the Midwest Shippers Advisory Board's Clean Car Committee, estimated early this year that dirty cars are costing the railroads and their users \$100 million annually. Although Mr. Rose emphasized that his figure is at best a "wild guess," few people think he overstated the case.

The Midwest group, and all other Shippers Advisory Boards throughout the nation, have been waging a constant and at least partially successful war on dirty cars.

This Clean Car Campaign is being waged with intelligence and considerable energy. And there can be no doubt that the campaign is getting results. Car Efficiency Committee reports indicate, however, that these results are difficult to chart. In addition, it is difficult to get a good over-all picture of the dirty car situation.

The survey below was put together in an effort to assemble some of the facts. Basic questions are asked in a search for some of the missing information.

### Profit by Others Experience, Help Others Profit By Yours

#### FOR INDUSTRY SURVEY USE THIS POSTCARD

#### YOUR HELP IS NEEDED

In the spring of this year, the Northwest Shippers Advisory Board asked railroads serving their territory to provide figures on the number of dirty cars rejected by consignees.

After a brief investigation, railroads reported that during the months of May and June, some 5,573 cars were shuttled to the Twin City clean-out tracks.

It is apparent that this does not represent an isolated case. Given serious thought, it leads to the opinion that Mr. Rose's \$500 million figure mentioned above is, if anything, an underestimate.

Just how much does a dirty car cost the railroad and the shipper. Who is responsible for dirty cars? Whose responsibility is it to correct the condition? What about legislation? Are there any sure cures?

By answering questions on the accompanying post card, you may help solve the dirty car riddle. Survey results will be published in an early issue of DA.

1. Over any given period, what per cent of the rail cars received by your firm are dirty?  
....% Box Cars ....% Gondolas and Flats ....% Reefers, Tankers and Others
2. Of the dirty cars, what per cent are cleaned by your personnel for immediate use?  
....% Box Cars ....% Gondolas and Flats ....% Reefers, Tankers and Others
3. Of the dirty cars, what per cent do you reject, i.e., turn back for railroad cleaning?  
....% Box Cars ....% Gondolas and Flats ....% Reefers, Tankers and Others
4. Comparing today's situation with that of a year ago, how do you rate the picture?  
☐ Considerable Improvement ☐ Slight Improvement ☐ No Improvement
5. Who, in your opinion, should be responsible for clean car service?  
☐ The Railroads ☐ The Consignees ☐ Joint or cooperative efforts
6. Do you think that ICC legislation, aimed at offenders, is required? ☐ Yes ☐ No
7. List briefly any suggestions for remedying the dirty car situation:

CONFIDENTIAL: Your industry is .....

Firm Name .....

City ..... State ..... Your name .....

FIRST CLASS  
PERMIT NO. 17184  
Sec. 34.9, P. L. & R.  
Philadelphia 39, Pa.

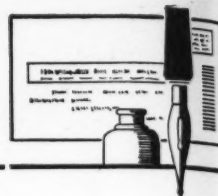
**BUSINESS REPLY CARD**  
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DISTRIBUTION AGE  
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PHILADELPHIA 39, PA.**

Reader Service

# FREE

# Literature



## Equipment Engines

"Which Engine Should Power Your Equipment?" is the subject of a helpful booklet published by Wisconsin Motor Corp., showing the various industrial application of their engines for numerous types of equipment.

Circle 50 on Service Card, Page 34

## Extra Tire Service

"How to Get Extra Service Out of Solid Industrial Tires," is the title of a new bulletin published by The Rubber Manufacturers Association, Inc. Illustrations show abusive treatment of tires. Also illustrated are 16 rules for longer industrial tire life.

Circle 51 on Service Card, Page 34

## Crane Weight Indicator

Martin-Decker Corp. has recently issued a bulletin on the Type SB-10 Crane Weight Radius Capacity Indicator. The bulletin describes the indicator, shows photographs and engineering drawings of it in operation.

Circle 52 on Service Card, Page 34

## 6,000 Lb Fork Truck

A 6,000 lb, electric-powered fork truck is detailed in a two-color, four-page folder issued by the Elwell-Parker Electric Co. Application photographs, engineering drawings and detailed specifications of the truck, Type F-31T, are included.

Circle 53 on Service Card, Page 34

## Unitize Multi-Wall Bags

Substantial gains from lessened claims, and demurrage, faster release of unloading facilities, easier and more accurate inventory taking, and a cleaner plant are claimed for users of multiwall bags who unitize them on Poke-Pak in an illustrated folder published by Mead Board Sales, Inc.

Circle 54 on Service Card, Page 34

## Portable Ramp

Literature showing how the new MAGCOA Portable Yard Ramp can speed ground-level loading and how the light-weight, heavy-duty Magnesium Dockboards can speed dock-level loading are graphically illustrated in new bulletins published by Magnesium Co. of America.

Circle 55 on Service Card, Page 34

## Portable Bar Racks

A catalog illustrating the various industrial applications of PS Portable Heavy Duty Bar Racks has recently been published by Palmer-Shile Co. The design permits bar selection from any rack without disturbing tiers and are built to any capacity and length of stock.

Circle 56 on Service Card, Page 34

## Gravity Conveyors

Food Machinery & Chemical Corp. has just released a new 15-page bulletin on their FMC gravity conveyors. Sectional, straight and curved conveyors, that are lightweight, easily carried and assembled are illustrated with specifications.

Circle 57 on Service Card, Page 34

## Materials Handling Dealers

Hyster Co. has published a new brochure of authorized dealers in sales, parts and service. Purpose of the booklet is to show at a glance the factory-quality sales, parts and service facilities available to lift truck owners.

Circle 58 on Service Card, Page 34

## BUSINESS REPLY CARD

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D. A.—Send more information on items circled below from your December, 1953 Issue.

1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153
2	10	18	26	34	42	50	58	66	74	82	90	98	106	114	122	130	138	146	154
3	11	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155
4	12	20	28	36	44	52	60	68	76	84	92	100	108	116	124	132	140	148	156
5	13	21	29	37	45	53	61	69	77	85	93	101	109	117	125	133	141	149	157
6	14	22	30	38	46	54	62	70	78	86	94	102	110	118	126	134	142	150	158
7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127	135	143	151	159
8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160

Remarks .....

Name (PRINT) .....

Company .....

Street Address .....

City .....

FOR FREE LITERATURE

USE THIS POSTCARD

AND PRODUCT INFORMATION



For prompt service, use the postage-free postcard provided here for your convenience in securing **FREE LITERATURE** and **NEW PRODUCTS** information described in this issue of **DISTRIBUTION AGE**. All material **FREE**, unless otherwise noted, as in the case of text books and some pamphlets.

### Underwriter Approved

Automatic describes in a new bulletin its Underwriters' Laboratories Approved Types "EX" and "EE" trucks. Type EX 2,000, 3,000 and 4,000 lb model is approved for use in hazardous locations involving fire and explosion. EE rated trucks, including Transporters, Transactors, and Transstackers have been approved for operation in semi-hazardous locations.

Circle 59 on Service Card, Page 34

### Storage Battery Manual

Users of storage batteries for cycle service in industrial trucks, mine locomotives and shuttle cars and material handling equipment will be interested in this sixth edition of the storage battery "Red Book" announced by Gould-National Batteries, Inc. The 60-page booklet contains several new tables and illustrations of new battery tools and auxiliary equipment.

Circle 60 on Service Card, Page 34

### Parcel Delivery Bodies

Boyetown Auto Body Works announces a 16-page illustrated booklet listing features of construction and design of interest to owners, drivers and maintenance men. The brochure tells of many advantages of hi-tensile steel in truck bodies to reduce dead weight, increase strength and inhibit corrosion.

Circle 61 on Service Card, Page 34

### Fast Cold-Sealing

A dust-proof, water-resistant, tamper-proof packaging material is described in a bulletin from the Sherman Paper Products Corp. A free sample of "Spot-Seal," a strong Kraft sheet with a coating of latex combined by a patented process, is available on request.

Circle 62 on Service Card, Page 34

### Lift Truck Catalog

A handy reference guide on material handling equipment, describing all the latest improvements, illustrating various features, sizes, models and complete specifications on single stroke, multi-stroke and hand electric power lift trucks is announced by Lift Trucks, Inc.

Circle 63 on Service Card, Page 34

### Steel Storage Containers

The Dravo Transportainer—a steel shipping container which provides extra protection and makes cargo easier to handle, is the subject of a new bulletin from the manufacturer, which illustrates how a shipping company cut their costs, cargo damage and pilferage.

Circle 64 on Service Card, Page 34

## BOOKS

### Battery Service Manual

The newly revised and up-to-date storage battery service manual covers in non-technical language how a battery is constructed, how it works, how to maintain battery stock, how to install and service automotive batteries, and how to make certain battery repairs. A section is devoted to car generator systems, which must operate properly for longest battery life. Definition of often-used electrical terms and a complete index are also included. "Storage Battery Technical Service Manual," The Association of American Battery Manufacturers, 2706 First National Tower, Akron, Ohio, 44 pp, 30 cents.

### Terminal Operations Booklets

Proceedings of the Sixth Annual Meeting of the ATA Terminal Operations Council are presented in eight individual booklets. The subjects covered include: "Power Through Teamwork" (\$1), "An Effective Claim Prevention Program at Terminals" (\$1), "The Use of Two-Way Mobile Radio in City Dispatching" (\$2), "Training and Screening Terminal Personnel" (\$1), "Methods of Freight Checking" (\$2), "Methods of Freight Handling" (\$2), "Key to Better Loading of Line Haul Equipment" (\$2), and "Cost Statistics" (\$2). The complete set of booklets are priced at \$10 or \$8.50 for 5 or more sets. Lower rates are available on 5 or more copies of a single booklet. J. S. Pelles, Jr., Secretary, ATA Terminal Operations Council, 1324 Sixteenth St., N. W., Washington 6, D. C.

### Economical Pick-Ups

Operating a  $\frac{1}{4}$  or  $\frac{1}{2}$  ton pick-up truck for 12 hours of daily hauling at a cost of 3¢ for electricity is possible with the Autoette line, states a new brochure just off the presses. Companies using these trucks are shown in illustrations as well as specifications and exploded views of the engine.

Circle 65 on Service Card, Page 34

### Electric Hoists

Yale Load King hand hoists, with capacities from  $\frac{1}{2}$  to 2 tons are described and illustrated in a new bulletin released by The Yale & Towne Manufacturing Co. Among the hoist's advantages, as depicted in the 8-page booklet, are (1) unusually light weight (the  $\frac{1}{2}$  ton model weighs only 36 lb) and (2) up to 95 per cent efficiency for faster and easier lifting.

Circle 66 on Service Card, Page 34

### Theft Hazards

A new folder which deals with the theft hazard faced by trucks involved in local pickup and delivery operations has just been published by Babaco Alarm Systems, Inc. Installation of alarm systems or local pickup and delivery units to reduce these thefts is discussed.

Circle 67 on Service Card, Page 34

### Line Marker

H. C. Sweet Co. has issued a folder on the "Florline" Model X line marker. Weighing less than 20 lb, under 7 in. wide, the machine has a paint capacity of  $1\frac{1}{2}$  gal. A line guide automatically folds back at curb or wall, permitting the machine to continue right up to barrier.

Circle 68 on Service Card, Page 34

### New Road Sweeper

The Model D "Yard Bird" Power Sweeper that can be pushed by fork lift truck, motor truck, industrial tractor, farm tractor or a jeep is described in a new folder published by Little Giant Products, Inc. Photographs show the various industrial applications of the sweeper.

Circle 69 on Service Card, Page 34

### Concrete Storage Plants

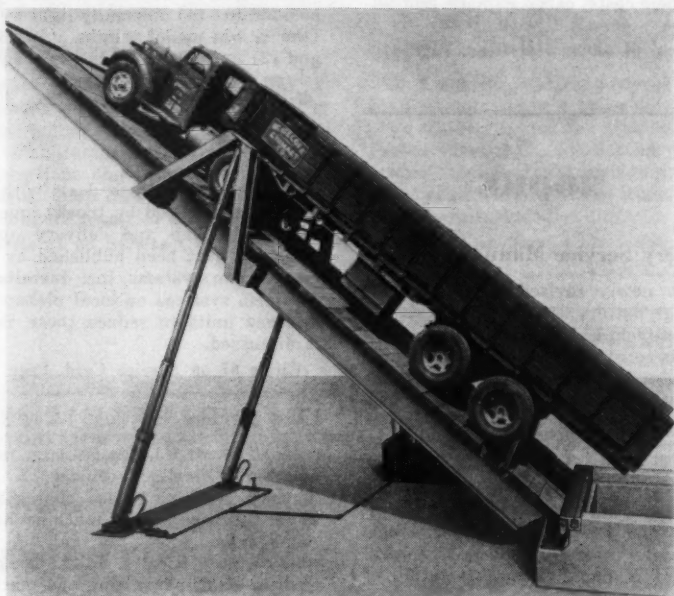
Portland Cement Association has issued two booklets, "Construction Details for Concrete Cold Storage Locker Plants" and "Modern Concrete Refrigerated Fruit Storages," which give detailed information, including specifications, floor plans, and photographs of modern storage installations using concrete.

Circle 70 on Service Card, Page 34  
(Please Turn to Page 54)

# DA *New* PRODUCTS

FOR FURTHER INFORMATION USE READERS' SERVICE

## Hydraulic Truck Dumper Lifts 40-Ton Loads



A hydraulic truck dumper for trucks and semi-trailers up to 54 ft long has just been announced by Link-Belt Co. It lifts trucks with gross weight of 80,000 lb to a 40-deg angle in 60 sec and lowers them in 40 sec.

It has two 20-hp motors directly connected to hydraulic pumps. Either motor is capable of lifting the platform and fully loaded truck. Two four-sleeve hydraulic telescoping cylinders pivot at the base of "A" frames on either side of the platform. Remote control equipment permits one-man operation.

The platform is heavily reinforced to prevent twisting or torsional bending. Wide separation of pivot points and low center of gravity provide stability.

Complete safety is assured by extra heavy hydraulically controlled stops that block the rear wheels of the truck.

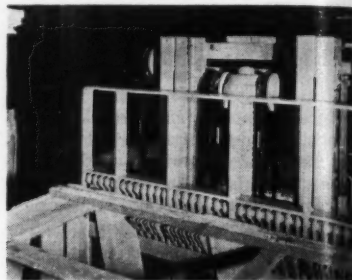
The dumper can be furnished in platform lengths from 40 to 60 ft, for grade-level or pit operation or for use with scales. The 50-ft size handles semi-trailers up to 54 ft long, the maximum allowed on the roads in most states.

Circle 100 on Service Card, Page 34

## Automatic Crate Lifting

A fully automatic crate-lifting attachment which permits handling of most kinds of open crates without the aid of pallets, skids or forks has been developed by Yale & Towne Manufacturing Co. The attachment consists of a row of saw-tooth

edged fingers mounted on a frame which is easily attached to the truck fork carriage. When the truck is driven against a crate, the crate slats push back some of the saw-

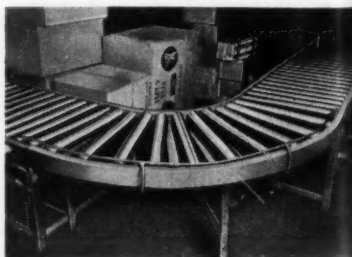


tooth fingers, which securely hold the crate. Two large crates or four small crates are handled at once.

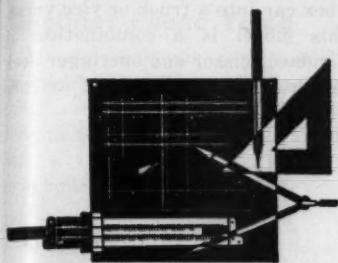
Circle 101 on Service Card, Page 34

## Power Driven Curve

Packages that can be handled on a gravity roller conveyor will travel over this power driven roller curve, manufactured by Harry J. Ferguson Co., which eliminates slow-ups, jamming and stoppage, and main-



tains uniform rate of flow for conveyor lines. Available in 90- and 180-deg, the "Streamliner" power driven curve uses 2-in. diameter rollers set in 5½- by 10-in. formed steel channels, on either 4- or 6-in. centers. Width between channels



## CARD...PAGE 34

can be from 10 to 30 in. in 2-in. increments. The drive is a 1/3-hp, 115/230-V, 60-cycle, single-phase, reversible motor.

Circle 102 on Service Card, Page 34

### Faster Box Ends

Box ends can be made three times as fast with this Air Stapler as by the conventional method, according to the Powers Wire Products Co.



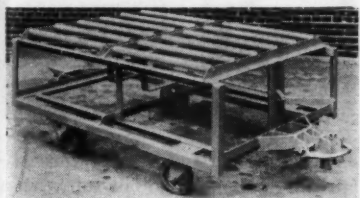
This method, as shown, allows the operator to fasten ends in the rear cleats of boxes easily and without danger of mashed fingers or skinned knuckles. The new stapler

drives up to a 1-in. leg staple. It can also be used for fastening steel strapping around wooden boxes in shipping departments.

Circle 103 on Service Card, Page 34

### Roller Top Trailer

This 3,000-lb capacity trailer features two roller conveyor sections at a height of 30 in. from the floor. It was designed by Mercury Manufacturing Co. to fit into standard



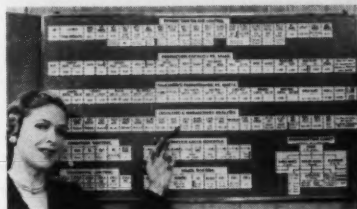
conveyor lines for the pick-up and transfer of packaged units. Rollers have 1.9-in. diameters and are 30

in. long. Platform size is 49 by 72 in. This trailer, designed to take two packaged units, eliminates the need for fork trucks at discharge points of conveyor and pallet loader lines.

Circle 104 on Service Card, Page 34

### Versatile Control System

Flexitrol, a control system manufactured by Methods Research Corp., can be adapted to your individual needs. The standard unit consists of a 24 in. x 42 in. control board with precision stamped slots for the insertion of up to 650 cards of varying sizes and colors. Hinged hanging hooks, riveted to the rear



at the upper corners, fold from sight for use on a table. For confidential information the deluxe model includes a hinged matching metal cover which easily swings aside. It can be adapted to truck routing, warehouse control, service call schedules, inventory control and other uses.

Circle 105 on Service Card, Page 34

### Muffles Exhaust Noise

After two years of engineering research, the GMC Truck and Coach Division, has developed an exhaust system for its GMC trucks that renders exhaust noises inoffensive to the human ear. A special name, "Silent Power," was originated for the system to indicate not only that GMC has eliminated objectionable exhaust noises but has not had to decrease its engine power to achieve it. The mufflers are a reverse-flow type, larger than previous units and made more rigid by the use of heavier gauges of metal. New exhaust manifold and larger exhaust pipes are incorporated in the system. A different system had to be developed for each of GMC's gasoline and diesel engines because of the different volumes of noise.

Circle 106 on Service Card, Page 34

### Torque Converter Added

Performance of the Hough Model HM "PAYLOADER" Tractor-Shovel for heavy duty switching and towing operations has been considerably improved by the addition of a hydraulic torque converter, according to The Frank G. Hough Co. This improvement is also incorporated in the gas and diesel-engine

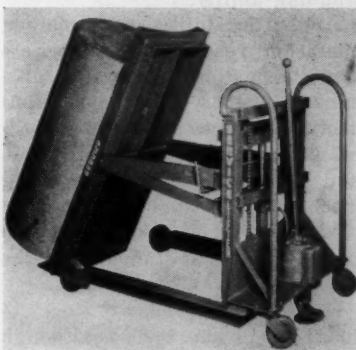


models. The converter is a 3-element type which multiplies the torque output of the engine in direct proportion to the load requirements. In conjunction with the four-speed, full reversing transmissions, it provides a much smoother tractor-shovel drive.

Circle 107 on Service Card, Page 34

### Roll Up-Enders

A new Special Hand Hydraulic Roll Up-Ender, designed for moving and up-ending rolls of cloth, paper, plastic, steel, etc., has been developed by Service Caster and Truck Corp. The new unit has a 1000-lb capacity and a 32-in. lift.



The concave platform measures 22 in. wide by 57 in. out from the up-rights. Overall height of the unit is 38 in. This unit can be equipped with a hydraulic release check, permitting its use as a roll-lowering device.

Circle 108 on Service Card, Page 34  
(Please Turn Page)



# DA *New* PRODUCTS

Continued from previous page

## New Line of Chevrolet Trucks for 1954



The new line of Chevrolet trucks for 1954 has been completely re-engineered to meet modern hauling requirements.

Major changes are reported in the new Thriftmaster and Loadmaster truck engines. Increased compression ratio of 7.5 to 1 provides greater economy and 112 hp, resulting in higher top speed, faster acceleration and improved hill-climbing ability.

Added durability and smoother operation result from full-pressure lubrication, lightweight aluminum pistons, insert-type connecting rod bearings, more rigid crankshaft and connecting rods and strengthened valve-operating mechanisms. Exhaust valve rotators, XCR valves and chrome top piston rings are standard on the Loadmaster.

Most of the models are easier to load. In pickup bodies, although the sides are higher, the over-the-side loading height is less. The rigid, grain-tight tail gate will support long loads when lowered.

New stake bodies are wider and longer. On the 161-in. heavy-duty chassis, the body of this multi-purpose truck measures a full 12 ft inside the stakes. Loading heights on the stake models are

lower, rear corners have been rounded and the stakes themselves are higher, extending 42 in. from the body floor on the 9- and 12-ft bodies.

For heavy-duty models the most powerful truck engine in Chevrolet history, the Jobmaster is offered as optional equipment. It provides greater power for acceleration and grade-climbing. The need for operation in low gear is reduced, producing longer engine life and economy. With displacement of 261 cu in. and a compression ratio of 7.17 to 1, it has 135 hp.

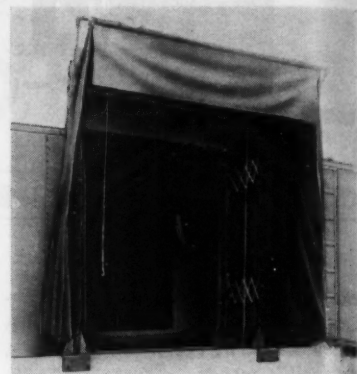
The automatic transmission is a new optional feature, available on light- and medium-duty models. The automatic transmission is four-speed hydra-matic design, except on the sedan delivery model, on which Powerglide is available.

Circle 109 on Service Card, Page 34

## Protection Without Dock

Atlas Industries, Inc. has just introduced a new model shelter that is used when no loading dock is available. The model is mounted on a concrete abutment and provides complete protection to men and materials when unloading from

a box car into a truck or vice versa. This model is a combination of standard scissor and outrigger dock shelters. The scissor part extends

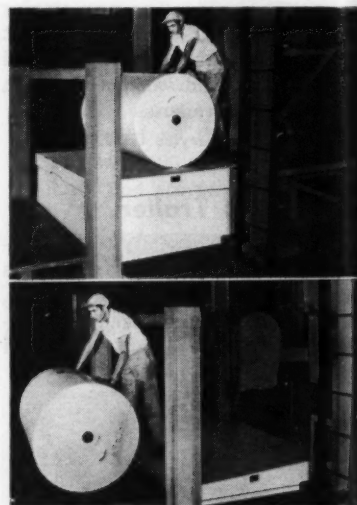


into the box car where it is fastened securely. The outrigger fits snugly around the truck. When not in use, the shelter folds neatly together out of the way of traffic.

Circle 110 on Service Card, Page 34

## Easier Bulk Handling

"Portelvator" is a new bulk handling device for positioning material for machine set-up, machine feeding, assembly or finish. The table area is 60 by 72 in., the lift is 21½ in. (from 5½ to 26 in. above floor level), and the load capacity is 6,000 lb. It is push button operated,



enclosed on all four sides, and features a cam operated tilt top with a 3-in. movement. It is electrically operated by a 1-hp motor, with limit switch and reversing starter.

Circle 111 on Service Card, Page 34

## Amplifies Phone Voice

A new electronic device, called "Fonadek," amplifies regular phone talk to normal voice level. A conference room full of executives can hear a voice coming over a single telephone receiver. Everybody present can talk back to the caller with-



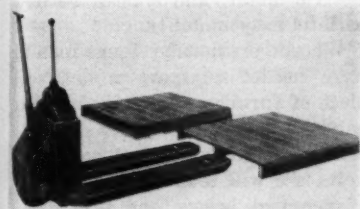
out leaving his seat. The earpiece of the receiver hooks over a hole near the top of the box. Sounds coming out of the receiver go into the box, are amplified and

come out at voice level. There's a volume control button. The Fonadek sits on a desk next to the telephone. It works on a battery and no wires are used.

Circle 112 on Service Card, Page 34

## Single or Double Face

Market Forge Co. is in production on a new 2,000-lb Model SD combination pallet load lift to handle either single or double faced pallets. The length of the truck, not including the forks, is 13 in. and forks are available from 24 to 72 in. long. The load wheels, available in aluminum, cushion rubber and



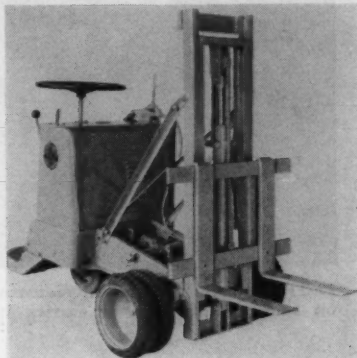
plastic, are articulated so that they ride over obstructions with much less effort than single wheels. The same simple hydraulic lifting mechanism used in their Skid Load Lifts and their 3,000- and 5,000-lb Pallet Load Lifts is incorporated in this unit as well as the pulling handle and fifth wheel ball-bearing swivel.

Circle 113 on Service Card, Page 34

## New Features

A number of new safety and performance features are incorporated in every Moto-Bug rolling off its assembly lines, Kwik-Mix Co., a Koehring subsidiary, has an-

nounced. Among the new safety features is the "dead man" internal expanding brake system, which instantly stops all machine movement when the operator's foot is off the

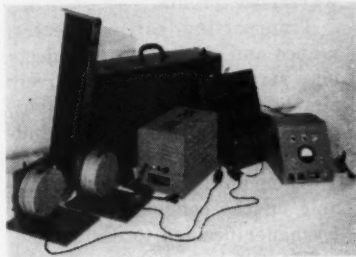


treadle. More efficient transmission of power from the 6-hp gasoline engine to the drive wheels is furnished by a cog-type V-belt of rayon cord construction. The cog design reduces belt stretch and slippage. A large size inspection door in the front panel of the cowl makes for easier engine repairs. Another new feature is a vertical clutch control level with neutral, forward, and reverse positions. For greater stability the double wheels are now cast in one piece with separate tires for easy inspection and changing. The Moto-Bug can be easily converted from a power wheelbarrow to a flat bed truck or fork lift.

Circle 114 on Service Card, Page 34

## Portable Alarm System

Ultra-high sound waves inaudible to the human ear are utilized to capture burglars in the new alarm system developed by The Alertronic Protective Corp. The alarm, which



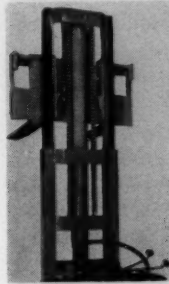
continuously floods the protected area with the inaudibly high pitched waves, sets off a signal when the wave flow is disturbed. The portable unit consists of the initiating equipment illustrated plus a monitor panel, all of which is con-

tained in a carrying case. As the monitor panel can be set up as far as 15 miles distant from the protected area by means of a leased telephone line, this unit is a complete central station system in itself.

Circle 115 on Service Card, Page 34

## New Hoist Protector

Extra protection of Towmotor lift trucks operated in dusty or abrasive conditions is assured by a new



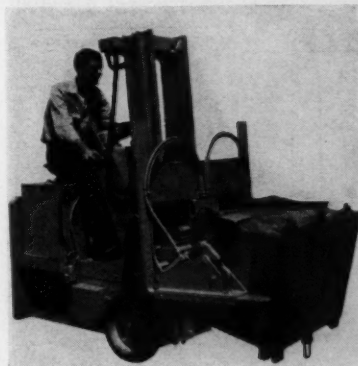
hoist protector introduced by Towmotor Corp. Specially recommended for installation on all fork lift trucks used in scoop operations, this tubular steel protector tele-

scopes upward or downward to match the movement of the lift plunger, which is constantly shielded. The protector can be adapted to six types of lift trucks.

Circle 116 on Service Card, Page 34

## Converts to Dumper

A new rotary dumping mechanism made by the Automatic Transportation Co., slips readily onto the forks of this Automatic FF-15 electric industrial truck, converting the truck from fork operation to dumping operation in



less than 20 min. Unique dumping action permits forward rotation of 190 deg by using hydraulically actuated pinion rear arrangement. The truck's permanently attached forks are hydraulically adjustable.

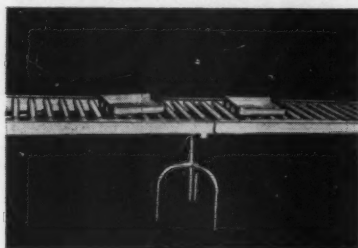
Circle 117 on Service Card, Page 34  
(Please Turn Page)

## New Products

(Continued from Preceding Page)

### New Portable Roller

Fabricated entirely of magnesium, this new Magliner gravity system combines capacity-rated strength and utility with magnesium lightness and greater ease of handling. Of standardized construction throughout, the conveyors can be installed as a complete system, or supplied in individual sec-

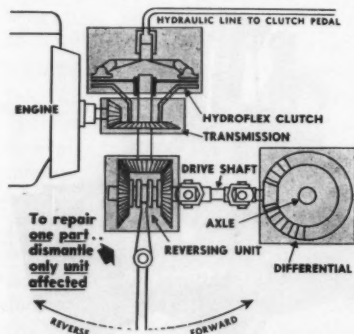


tions, with couplers to match existing equipment. Portable magnesium stands in three height ranges, from 17 to 72 in. above floor level, also are offered.

Circle 118 on Service Card, Page 34

### Unconditional Guarantee

An unconditional guarantee of 12 months has been placed on the new Hydroflex Clutch, an exclusive feature on Hi Duty Lift Trucks, according to announcement from Transitier Truck Co. The Hydroflex clutch is hydraulically actuated



and operates in conjunction with the Hi Duty Uni-Drive transmission. This simple power train uses only a forward reverse lever and a clutch pedal to provide the lift truck operator the positive control of his truck and load he needs to prevent accidents.

Circle 119 on Service Card, Page 34



Left: Howard Eychaner demonstrates his electrical mover safely halted on stairs. Right: Mover carries freezer on van without physical effort



## New Warehouse Mover Safely Climbs Stairs

Young warehouseman designs his own device for safe handling of furniture on stairs

Moving household goods up and down stairs safely with a minimum of effort also worried Howard Eychaner, young owner of the Blue Van & Storage Co., De Kalb, Ill. Damages to furniture, marring of stairs, floors and rugs, plus possible injury to employees can take a big slice of warehouse profits.

Transporting safes, freezers, pianos and similar heavy objects on a straight level was relatively simple when using a dolly, but, toting them up and down winding stairs was another thing.

When no device seemed available on the commercial market, Eychaner decided to design one.

The new invention is a crawler type unit with an electrically driven continuous belt mounted on rollers attached to a metal pallet designed to support heavy loads. A small push-button panel, palm size, controls the 1/4-hp.

electric motor, and a 50-ft cord permits easy mobility.

Where previously four men were needed to move a heavy piece of furniture on stairs, now only two men are required. One man can ride on the load.

Its use will reduce the chance of personal injury and provide better protection both for the article and the floors or stairs over which it travels.

Sturdy, compact, easily portable, the mover is reversible and has an automatic braking feature which prevents roll back should the machine be stopped intentionally or by a power failure. The rubber covered belt makes the only contact with the floor or stairs.

The mover has a rated capacity of 750 lb and travels at 5 fpm but heavier or lighter capacity models can be built to specifications. •

Circle 120 on Service Card, Page 34



# Fast, Versatile Handling With Overhead Cranes

**Electric company reduces floor handling,  
saves space, utilizes crane flexibility**

**S**EVEN overhead handling installations are helping Reliance Electric and Engineering Co. to achieve fast, versatile handling with maximum use of available space at its new plant in Euclid, Ohio.

They serve receiving and shipping docks, motor storage, the engineering laboratory, paint spray booth and the coil winding department.

The amount of floor handling has been reduced, eliminating traffic-jammed aisles, thereby promoting good housekeeping. Reliance has placed a wide variety of handling tasks in the one-man job classification, avoiding interference with production workers and the safety hazards inherent in makeshift handling methods.

## Proves Flexibility

The new installations not only provide efficient handling at seven strategic locations for current plant work, but they have been installed with a wide variety of possible future jobs in mind.

Crane runways in some instances have been extended far beyond present requirements. In other of the installations, "over-size" capacities in runway, girder and hoist specifications will make possible a quick, low-cost shift to

other handling jobs when future production requirements change.

Receiving and shipping docks are served by similar installations, each being a five-ton capacity, single girder crane, with all motion motorized and operation controlled by one pendant push-button station suspended close to the hook.

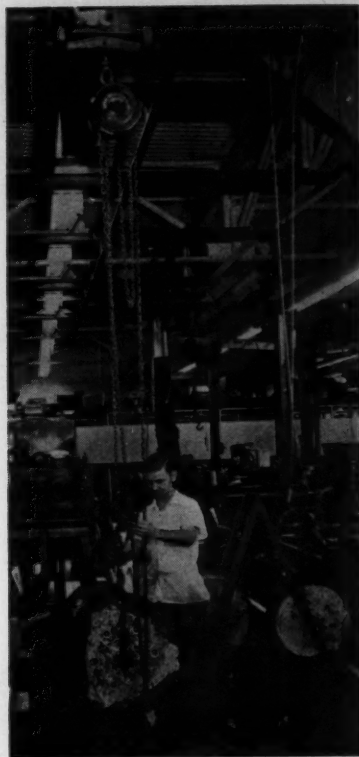
In the engineering laboratory it is often necessary to move and spot in place such heavy loads as motors, generators and large control cabinets for various tests. A crane with a three-ton capacity hoist makes this an easy and safe job.

## Makes Storage Easier

The low headroom construction of the cranes permits high stacking of the crated motors, maximum use of space and quick accessibility to whatever type motor is desired, regardless of where it may be located in the storage area.

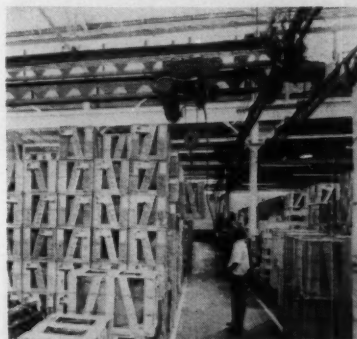
In coil winding, an interlocking system with multiple spur tracks and a hand-operated hoist bring the coil of wire directly to work in process.

A ten-ton capacity single girder hand propelled crane with an electric hoist is equally important as a time-saver in facilitating movement of parts in and out of the paint spray booth. •



**A hand-operated, ½-ton capacity Tram-beam crane makes wire handling easy**

**Higher stacking in storage area and complete coverage in receiving area**



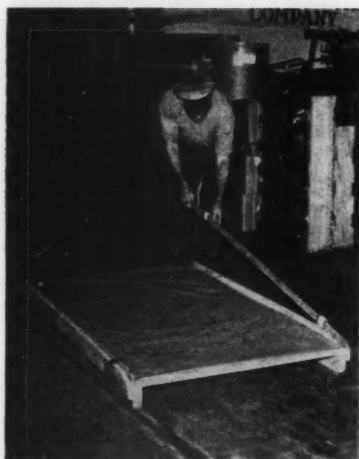
By Marion W. Niedringhaus, *General Van & Storage Co., St. Louis, Mo.*



Revolutionary pallet enclosure is inexpensive, neater, fire resistant, dust-proof, cuts 7 of the 11 old handling methods

# Pallet Vault

## Makes Household Goods



Dust-proof paper stapled to pallet, dividers give proper margin for sides

Pallet lift conveys a neatly piled load of tagged furniture to elevator



UNTIL recently, we've never associated such words as research, experimentation, surveys and invention with warehousing. When we started to search for economies from within our business by attempting to increase our storage capacity and reduce handling costs, however, we found ourselves becoming warehouse engineers.

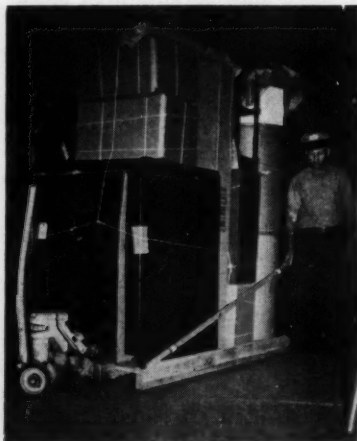
Our recently acquired warehouse in St. Louis was being cluttered with in-bound shipments, interrupting the flow of goods through the main lines of the warehouse. To remedy this situation, we thought

we would give palletization a try.

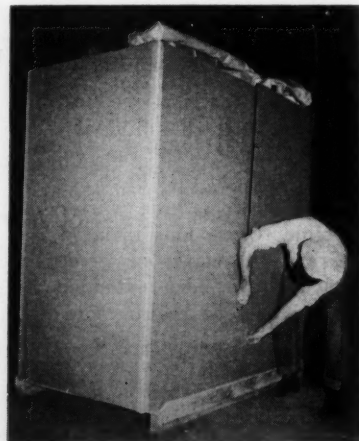
The high cost of wheeled platforms to reduce handling started us thinking of devising our own methods of reducing costs and mechanizing the usual methods employed in household goods storage.

Are wheels necessary under a platform? This was one question that bothered us. Wheels may be used once in three weeks, three years, or even ten years. This thought evolved into the idea of using a jack lift and pallets without wheels. After a number of experiments with various sizes of these

After additional small pieces placed on top of pile, dividers are removed



Boxboard panels fit in place left by dividers, then securely interlocked





## Handling History

platforms, we decided upon the 4 by 6-ft pallet with three lateral 2 by 4-in. stringers as the standard size which would accommodate any article of household goods.

Next came the question of sizes. We had concluded that nothing could be piled on a pallet to any height without a protective side of some kind. This proved to be false, for sides are unnecessary. In fact, they can be a hindrance as well as an expensive nuisance.

We then developed a method of stacking and tying furniture onto these pallets, which eliminated the necessity of putting sides on the pallet in order to secure the furniture while being transported in the warehouse.

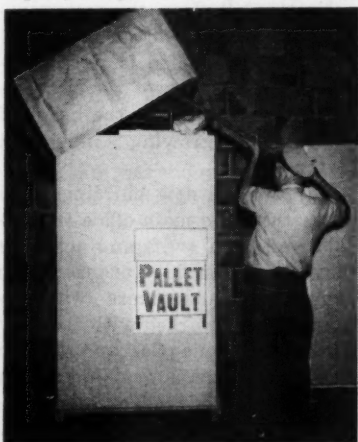
*(Please Turn to Page 60)*

Above: Old way of individually wrapping each piece, 11 handlings, difficult access, easily damaged in piling.

Below: New way is dust-proof, reusable, neat, easy access, save 7 handlings and aisle space, clean, minimizes damage from fire, water, loss and pilferage



Paper cap, placed into position with R-pole, completes dust-proof package



2000-lb capacity pallet lift carries 4x6-ft Pallet Vault into storage area



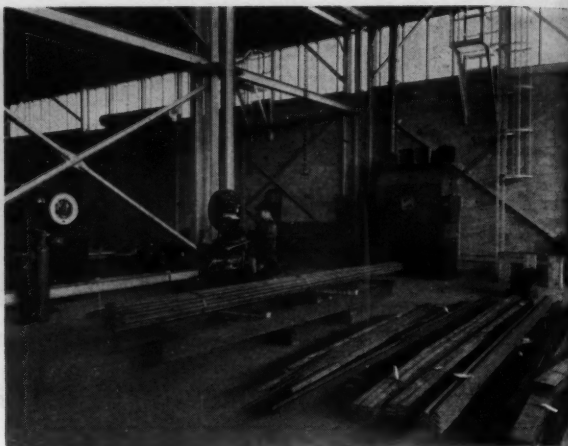
Final detail is the marking of lot number on outside of the Pallet Vault







Specially designed racks in hot rolled bar bay facilitate storage in 5-ton bundles up to 60 ft long by crane handling



Three print-weigh scales in hot rolled bar, sheet and plate and cold finished bar bays assure accurate weighing process

## New Steel Warehouse Model

Steel company 'tailors' new warehouse in every detail to develop efficient system of handling, cutting, weighing and storing steel

By George E. Toles

**E**VERY angle of the new Enos & Sanderson steel warehouse in Buffalo, N. Y., was "custom tailored" to insure the most efficient system possible for the handling, cutting, weighing and storing of steel.

In carefully preplanning the building, E&S adopted a formula of integration. Factors tied one-to-the-other to give a smoother over-all operation include actual building construction features, paper work procedures, materials handling equipment and systems, plant location and warehouse layout.

The 35,000 sq ft warehouse stocks steel in every conceivable shape and cuts it to specifications for hundreds of factories and shops in New York and Penna.

### Warehouse Location

With its operations growing constantly, E&S found it needed space with rail facilities. It procured an ideal location on Military Rd. The New York Central Railroad is virtually at the back door of the warehouse. The firm induced the railroad to install an industrial side track from which the firm took off its own siding.

North of Buffalo, the new warehouse is away from the congested urban area but also is in the immediate proximity of Tonawanda and Niagara Falls, in the heart of a rapidly growing industrial sector.

Because the new building is 15 miles from the main office in Buffalo proper, a swift and accurate means of sending orders from company headquarters was required. E&S worked with the New York Telephone Co. and Moore Business Forms in devising a plan which has produced excellent results.



Overhead view of sheet and plate bay shows one of three large cab-controlled cranes in operation. Note gondola car in the background

## of Efficiency



A special form was designed by Moore. At the sending point, or main office, the company has duplicates which, in perforated forms, continuously feed into its teletype machine.

At the warehouse, the forms also feed continuously, but there are five copies in this set: 1. Work order copy. 2. & 3. Delivery tickets. 4. Packing slip. 5. Warehouse copy.

These are pre-printed, showing the firm's number, space for customer's name, order number, date, requisition number, method of shipment, and space for 14 items

to be listed. There is a separate column for weight designation.

As orders are received at the warehouse, they are taken from the machine, each set intact. All five copies are prestapled to keep them together. As each item of the order is filled, the set is inserted into one of the concern's three scales and the exact weight is automatically printed.

Because the sets are all carbon backed, the weights print on all five copies. The customer has the accurate weight on his delivery ticket and packing slip the moment it arrives at his plant.

The work order is initiated by the man who assembled it and is dated when the material leaves the warehouse. It then is returned to the main office. The firm enters the exact weight from the work order ticket on the billing copy, prices the order and sends out the invoice.

In over a year of using this method, there has not been one error or complaint. In order to screen some messages which would ordinarily print on the customer's copy, the company devised a series of "Q" signs which, although meaningless to the customer, are recognized by employees.

### Unit Bundling

In most instances, E&S orders material from the mill in 5-ton lifts. Each lift comes in a banded or strapped package. These bundles, or lifts, are easily carried by cranes to their rack positions without shifting or slipping of the load. Once in the rack, the bands are removed to enable workers to easily draw out the bars.

As customers' orders are filled, they are gathered together after the weighing process and banded with portable strappers. On heavy loads, 1¼-in. strapping is used; on the lighter loads, ¾-in. strapping.

With a good tight package, there is no cause for shortage on the delivery. Sheets, strips and sometimes plates of uniform dimensions are banded for security. The firm cuts bars and structurals to length to the customer's specifications. After the order is cut, all pieces are strapped in a package, the load is weighed and put in the shipping area for delivery.

Each order is tagged with the name of the customer and to it is attached an envelope of water resistant material which carries the packing slip.

Enos & Sanderson officials visited a number of steel warehouses before planning the Buffalo house and gained knowledge of various types of racks. The racks adopted are of the company's own design, but there are many similar ones in use in leading steel warehouses.

Uprights of the racks are 5-in. (Please Turn to Page 54)



Wooden pallets eight feet long are used for handling boxed materials. Pallets are tiered on racks set at 45-deg angle



Handling long crates of copper sheeting is made easier by use of chain and hook rigging to hold up one end of crate

## Industrial Warehouse Cuts Man-Hours 30%

In its new one-story warehouse, with a carefully engineered materials handling program, this copper and brass distributor is able to handle 25 per cent more volume with two-thirds the warehouse personnel required in the old multi-story building

**H**OW AN imaginative materials handling program enabled a wholesale metals distributor handle a 25 per cent increase in volume with 30 per cent less personnel is the story of Vincent Brass and Copper Co., of Minneapolis, Minn.

The firm distributes brass and copper to manufacturers all over the country. The metals are shipped in various forms—bar stock, sheets, rolls and in cartons. Because of the weights involved,

**By Paul Vincent**  
*Vice-President  
Vincent Brass & Copper Co.  
Minneapolis, Minn.*

almost all handling has to be done mechanically.

### Old System

Part of the company's trouble lay in the warehouse they occupied up till two years ago. The building was old, had no loading

docks, and materials had to be stored on four floors. Two elevators moved the goods up and down, but on-floor movement was seriously handicapped by many columns and posts. Handling costs were high and general efficiency was far from satisfactory.

Eventually business increased enough to warrant the building of a new plant, and it was immediately decided to give primary consideration to a design that would allow maximum efficiency



in materials handling. The new building was to be a one-level affair with a minimum number of column obstructions and ample space allowed for shipping and receiving docks.

As construction of the new warehouse neared completion, management considered the matter of handling brass and copper bar stock. From 8 ft to 20 ft in length and up to 2 in. in diameter, the bars presented an awkward problem in handling and storage.

Unloading and storing the bars in the old warehouse had been a time-consuming process. Bar stock is shipped in "bundles," with 20 or 30 bars to the bundle. Each bundle weighs several thousand pounds.

Unloading the bundles from trucks was accomplished by wrapping a chain around one end of the bundle and using a small fork-truck to literally drag the bundle off the truck and across the plant to storage racks. The bundle was then untied and each bar was manually stored on end in the rack. Two men needed 15 minutes to unload and store each bundle.

When the time came to ship the bar stock, each piece was taken out of the rack, re-tied in a bundle, and either carried by hand or dragged across the floor and onto a truck.

#### Crane Attachment

Since bar stock constitutes a considerable portion of the company's shipments, the firm wanted a handling method that would drastically reduce the man-hours needed to handle bundles. Clark Equipment Co. engineers designed and built a special crane attachment to be mounted on a gas-powered fork truck of 7,000-lb capacity.

The attachment has a boom about nine feet long, with three hooks spaced 2 ft, 6 and 9 ft from the end of the boom. The end hook is used for light loads and the inside hooks

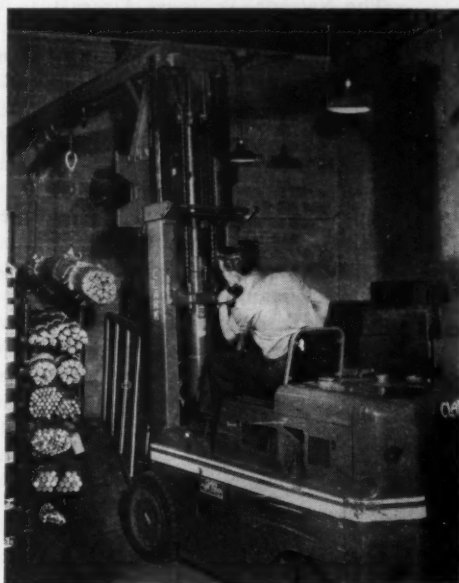
for heavier loads. A sling is suspended from the hook.

When lifting a bundle, wire ropes hanging from each end of the sling are wrapped around the bundle, the boom is raised, and the fork-truck carries the bundle off the truck to horizontal storage racks. The racks are adjustable; sections can be added and removed as they are needed to allow vertical tiering.

With the crane attachment a bundle is unloaded and stored in five minutes by two men, one man driving the fork-truck, the other guiding the bundle into the rack. The process is reversed, in the same time, for shipping.

#### Easily Converted

The crane was designed to be removable so that, with regular forks, the truck could be used to handle other material. One man can remove the forks from the truck and attach the crane in five minutes. The reverse operation is done in the same time.



Removable crane attachment is used to move bundles of bars to storage in adjustable racks

Another innovation at Vincent's is the use of a chain and hook to help handle unusually long crates of copper and aluminum sheeting.

Three or four feet wide and eight to twelve feet long, the crates must be picked up from the end rather than the middle because of the way they are loaded on trucks.

#### Grappling Hook

This is accomplished with gas-powered truck of 2000 lb capacity. Channels are welded to the backs of the uprights of the truck and a 1-in. pipe is slipped through the channels, fitting into notches cut into the sides of the uprights. A chain is hung from the middle of the pipe, between the uprights, and to the end of the chain is attached a grappling hook.

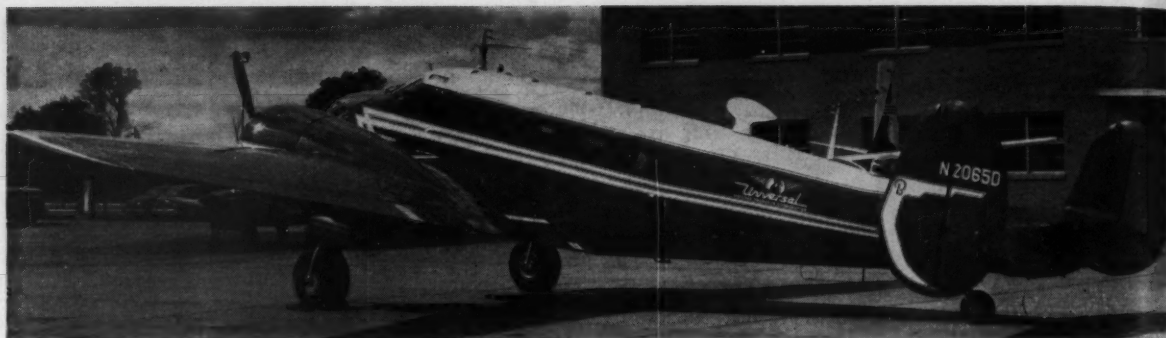
When a long crate is to be lifted, the forks of the lift-truck are inserted under one end of the crate and the hook is fixed to the other end. The chain is kept taut by tilting the stack of the truck. The forks are raised and the truck carries the crate to storage.

Cartons of copper tubing and other boxed materials received by Vincent are unloaded from trucks on to wooden pallets eight feet long. Moved by fork-truck, the pallets are stored on racks standing in a row and staggered at a 45-deg. angle to facilitate maneuvering. This set-up allows the truck to operate efficiently in aisles only seven feet wide in some places.

#### System Savings

The savings in lowered costs due to these materials handling innovations has not yet been calculated, because the program is still being developed. However, the system has already reduced the labor force by 30 per cent, handling 25 per cent more volume than in the old warehouse. Everything is being done faster; man-hours have been cut from almost every handling operation.

Although many long hours were spent in planning, and some new equipment was needed, the system is rapidly paying for itself. •



This multi-engine cabin aircraft, owned by Universal Moulded Products Corp., is the latest model business plane manufactured by the Beechcraft Aircraft Corp.

## Private Planes—Management's Magic

**I**S YOUR transportation as modern as your business? For some 8,000 business concerns in this country it is. These are using company-owned aircraft for all sorts of business activities.

In 1946 there were some 2,500 business aircraft in use, and only 500 of these were multi-engine. Today, the business aircraft fleet numbers 10,000 planes with over 1,600 multi-engine. This compares with 1,034 multi-engine aircraft operated by the airlines. The total number of seats available today in "corporate" aircraft number 40,000 as compared to 35,000 seats in the aircraft of the airlines.

Business aircraft flew approximately 520,000,000 air miles in

**John H. Frederick**  
*Transportation Consultant*

1952, and an estimated 3,250,000 hours.

The National Business Aircraft Assn. reports that, in 1952, all business aircraft put together showed an estimated passenger fatality rate of less than .5 per hundred million aircraft miles flown. Such a safety record is outstanding since at least 70 per cent of business flying is off the established airways with landings made at airports of all sizes and descriptions, many times under adverse weather conditions.

Businesses operating their own aircraft today have an investment

of about \$200 million in their overall aviation activities and have been spending about \$175 million a year keeping their aircraft in operation, including conversions, and the purchase of new planes.

Many of the company-owned multi-engine planes are converted World War II models which have cost between \$125,000 and \$200,000 each. Of the operating costs, about 60 per cent goes for fixed charges such as insurance, hangar rental, pilot salaries, depreciation and taxes. The balance goes for gasoline, oil and maintenance.

Actual costs per passenger mile vary from 8 cents to 25 cents depending on the type of plane and amount of use. Companies report using their planes from 350 to 1,000 hours per year with an average of 596 hours.

### Own Organization

So important has business flying become that owners of "corporate aircraft" organized their own trade association a few years ago. The National Business Aircraft Assn. serves all industry operating this type of aircraft: To provide a united front where organized action is necessary to bring about improvements in equipment, service, and proce-

Asplundh Tree Expert Co., Jenkintown, Pa., owns this new Beechcraft plane, typical of single-engine models popular with companies, economical to fly



Increased travel efficiency,  
60 per cent savings in costs,  
30 per cent saving of time,  
and greater company prestige  
has made private aircraft a  
good economical investment

## Carpet

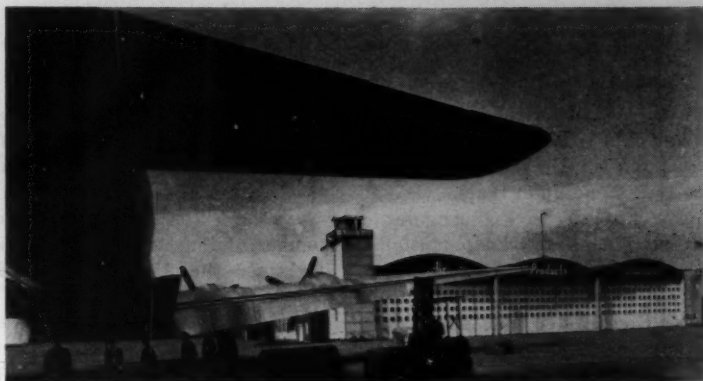
dures; to further safety and economy in business-aircraft operations; and to protect corporate aviation interests.

Companies with widely scattered interests find that ownership and operation of one or more planes can be economical. This may come as a surprise to anyone who fails to look behind the fairly large initial cost of a new Beechcraft, Grumman Mallard or plush conversion DC-3 or Lockheed Lodestar, or who considers only the total annual operating costs.

Here are some of the ways that dollars and cents are saved and prestige gained:

1. **Increased travel efficiency.** Business aircraft provide from 150 to 300 miles per hour speed whenever it is wanted to wherever there is an airport or some suitable place to land and take-off again. There are no connections to make, no "bumping" from an airline for one reason or another, no dependence on public transportation schedules, no refusals or cancellations of late registrations. Larger companies report that from 300 to 600 different employees, on the average, use their plane one or more times a year.

(Please Turn to Page 64)



A military cargo plane lands at the doorstep airport of Air Products Inc.

## Airport At Factory Speeds Delivery of Oxygen Generator

**A**N AIRPORT at the door of its Allentown, Pa., factory paid off for Air Products, Inc., when the company received an order for overseas shipment of one of its oxygen generators. This airport facility permitted the Military Air Transport Service to bring one of its C-74 cargo transport planes directly to the manufacturer for loading.

One complete oxygen generator, capable of producing 1,000 cubic feet of oxygen per hour, was loaded in three sections into the plane from the ramp of the airport at the factory. Seventy-two hours later it was installed and in operation on the other side of the world.

This unusual demonstration in direct air delivery illustrates the technical revolution that has occurred in the design of oxygen generating equipment. Ten years ago, apparatus installed for manufacturing this quantity of oxygen would have covered a factory area 20 times greater than the 320 sq ft required by this unit.

Air Products Inc. secured this former aircraft factory, with attached airport, to expand its manufacturing facilities from the main plant in Emmaus, Pa. Apart from the convenient airport facility, Air Products Inc. also makes effective use of the former aircraft buildings. •



One of the three main sections of the oxygen generator is placed by a fork truck on the elevator of the C-74 military cargo plane for shipment overseas



## ... Chuting the News

(Continued from Page 15)

better highways was making progress and that the enemies of trucking were failing in their efforts to place the blame upon trucks.

J. W. Sinclair, of Los Angeles, superintendent of transportation for the Union Oil Co. of California, told members of the Private Carrier Conference that adequate highways maintained at an equitable cost to all highway users and free of restrictions other than those in the public interest must be available in the future if the trucking industry is to prosper.

Cooperative efforts by highway users and state highway authorities can bring about the solution of the existing problem of inadequate highways, declared General Merrill. He likened his own state program to Project-Adequate Roads.

Mutual understanding produced such great results, he said, that "in presenting our last plan to legislative hearings, it is of interest that the farm groups spoke fast in behalf of expressways for industrial traffic and the trucking industry spoke fast in support of the agreed percentage of expenditures on rural roads."

### Discriminatory Taxes

Adoption of third-structure taxes such as the New York and Ohio weight-distance taxes against the trucking industry are reversing the trend toward reciprocity among the states and are interfering with the free flow of interstate commerce, M. C. Connors, secretary of the Oklahoma Tax Commission, declared.

Although the railroads have been sharing in the increased transportation resulting from war conditions and the expansion of the economy of the country, "the trucking industry is sharing in it to an enormously greater extent," Interstate Commerce Commissioner Hugh W. Cross stated.

During the period from 1939 to 1951, "the ton miles handled by class 1, 2 and 3 interstate trucking companies increased 268 per cent, while the ton miles hauled by rail increased 94 per cent," he said.

Highway tax problems can generally be solved by facts and mutual cooperation among tax administrators, legislators and highway users, Roscoe E. Hammond, member of the Utah Tax Commission, told the ATA board of directors.

A protest against the "unreasonable burden" of government regulations affecting the transfer of operating rights was voiced by resolution of the Irregular Route Carriers Conference.

In a second resolution, the conference "urged the commission to continue and accelerate its efforts toward simplifying the commission procedures" and offered its cooperation and help in any legislative changes that are needed.

—DA—

### New Shippers-Carriers Group

*Organization of the Northeastern Shippers-Carriers Council, with a membership of more than 200 representatives, was perfected at a meeting in Hartford Conn., Nov. 5*

*Elected as co-chairmen of the council were Nicholas Maarschalk, traffic manager of the Manufacturers' Association of Connecticut, representing the shippers, and Leo E. Golden, president and general manager of the Eastern Motor Freight Conference, Inc., of West Hartford, Conn., representing carriers.*

—DA—

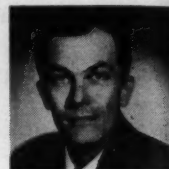
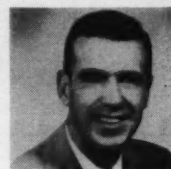
### MHI Attends AAR Meeting

The Material Handling Institute was requested by the American Association of Railroads to appoint a committee to attend the Lincoln, Neb., convention meeting of the AAR on Nov. 17-18. Appointed to represent MHI was John G. Bucuss, chairman, L. West Shea and Howard M. Palmer. The committee visited railroad storehouses in that area to learn intimately of their material handling problems. On the second day, a round-table discussion on these problems was held by the members of both organizations.

## Men in the News

(Continued from Page 15)

distribution assemblies dept., General Electric Co.; T. D. MacLafferty—new manager-marketing; Charles K. Skinner—manager-manufacturing and R. J. Blair—manager-finance.



James E. O'Connor (left) and Arthur Wagner (right)—appointed marking systems engineers for Weber Label & Marking Systems, Division of Weber Addressing Machine Co.

### Traffic

J. G. Donnelly—appointed general traffic manager, Pacific Fruit Co., San Francisco, Cal. He succeeds C. H. Carner, retired.

F. S. (Zeb) Kohles—new general traffic manager, Valley Motor Lines.

William D. Prevost—appointed assistant traffic manager, Forest Lumber Co.

### Transportation—Air

Capt. W. D. (Bill) Williams, United Air Lines retired from flying after 35 years and more than 3 million miles. He will continue as the company's manager of flight operations at San Francisco.

### —Highway



Warren Lee Pierson—chairman of the board and chairman, executive committee, Trans-World Airlines, elected member, board of directors, Fruehauf Trailer Co.

Elliott G. Ewell—elected to the board of directors of Mack Manufacturing Corp. and vice president, Mack Trucks, Inc.

### —Water



Clifford B. O'Hara (left)—appointed chief of the newly consolidated trade promotion and protection division of the Port of New York Authority. Robert F. Unrath (right)—will assist him as trade promotion manager. Also, serving with O'Hara are Edward K. Laux, traffic manager in charge of port protection activities, and David L. Glickman, trade economist.

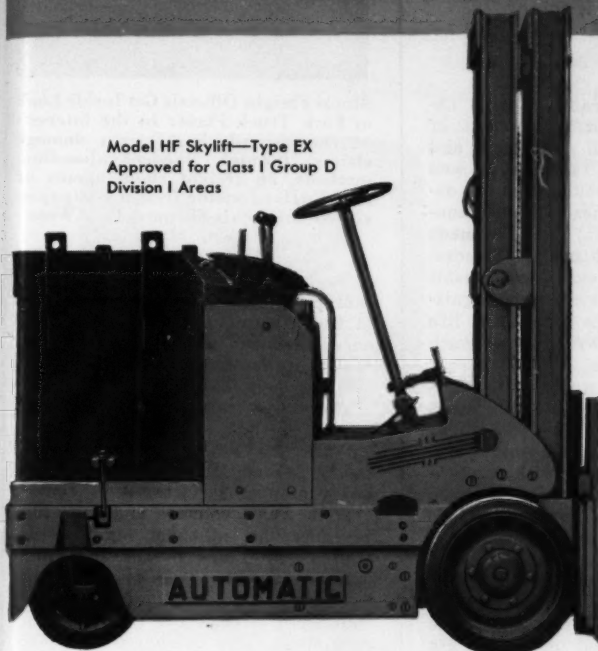
(Resume Reading on Page 17)

# ANOTHER Automatic "FIRST"

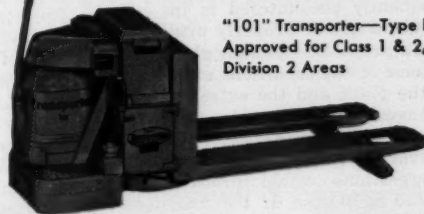
## UNDERWRITERS' LABORATORIES APPROVED

### TYPE EX and EE INDUSTRIAL TRUCKS

Model HF Skylift—Type EX  
Approved for Class I Group D  
Division I Areas



"101" Transporter—Type EE  
Approved for Class 1 & 2,  
Division 2 Areas



#### TYPE EX—UL-APPROVED FOR OPERATION IN HAZARDOUS LOCATIONS

AUTOMATIC proudly announces Underwriters' Laboratories Type EX approval for 2,000, 3,000 and 4,000 pound capacity models of HF Skylift electric trucks... *the first time UL has given any industrial truck approval for use in hazardous locations involving fire and explosion!* Thus, an electric fork truck is at last available, fully acceptable for use in these areas.

Moreover, the UL's specifications are used by the National Fire Protection Association as the basis for insurance policies throughout the country—and these EX rated Skylift trucks therefore meet National Fire Protection Association requirements as well.

The Underwriters' Laboratories Label signifies approval of the complete truck, including battery.

MAIL COUPON TODAY for complete information on these AUTOMATIC models approved by Underwriters' Laboratories!

#### TYPE EE—UL-APPROVED FOR OPERATION IN SEMI-HAZARDOUS LOCATIONS

In addition, Automatic has been given the UL Label of Approval for EE rated trucks, for operation in semi-hazardous locations. These Type EE trucks include Transporters, Transactors, and Transtackers equipped with Type EE sparkproof and dust-proof protection. *Automatic is the only manufacturer of operator-led trucks with Type EE Underwriters' Laboratories Approval!*

As in Type EX trucks, the National Fire Protection Association also bases its insurance policy recommendations for Type EE trucks on Underwriters' Laboratories specifications.

Clearly, if your materials handling operations involve hazardous or semi-hazardous locations, one of these Automatic industrial trucks is your answer! For complete details, mail coupon below!

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# MHI Handling Clinic

As a service to readers, DA is presenting a series of questions and answers taken from the recently organized MHI-AMHS Traveling Clinics. The questions and answers are being reproduced here because of their general value and because many DA readers are unable to attend the clinic sessions. This month's question is taken from the first clinic, in New York.

**Q.** *Our company is in the midst of an expansion program. Can the panel give us any tips on how to integrate our old handling systems with the new ones? Should we put in an entirely new system? What is the experience of the panel regarding material handling during a company expansion?"*

**A.** Most of the participants at the table felt that this problem, although a very important one and frequently encountered in industry, could not be properly evaluated and proposed solutions given unless some of the conditions existing in the plant and the extent of the changes and expansion were more clearly stated.

However, the following comments and suggestions would probably aid in the resolution of the problem:

The eventual layout after current expansion is complete should be made the "ideal" method for doing each job and integration as a system, regardless of current equipment and methods. It should

be set up, preferably in a "3 Dimensional Layout." The cost of operation with all advantages and disadvantages in tangibles as well as intangibles would then be developed, under those assumed conditions. A proposal should be made for the eventual use or disposal of equipment released as a result of the eventual system (recognizing the economies of normal life expectancy and write off of much of this equipment).

The next step would be to make the progression of step or steps between the system and conditions existing now and the eventual system and conditions, with integration into the production problem and other special situations. This assures smoothness of operations and changes with a minimum of delay and upset to all parts of the organization.

Where possible, assuming some new equipment or techniques are being introduced, change over in units of groups, sections, departments or the like, isolating the new equipment or technique from the old, not only for comparison, but also to prevent contamination.

A most important point is the discussion of the program and the plans, as minutely as possible, with the people concerned and their representatives if unionized. If a "3 Dimensional Layout" is used, after decisions are made, it could be set up for the plant personnel and union representatives to see, discuss it and answer their questions, explaining the steps of progress from present to future, so that their spirit is one of intelligent cooperation rather than resentful or fearful movement under coercion.

It should be remembered that the above approaches work equally well whether a system is being changed or one piece of equipment or technique is improved.

Even where the climate may not be conducive to change at the moment, the "ideal" should be maintained in mind or model or matrix so that actions are not agreed to or proposed which answer an immediate problem only to present a greater problem later when the long range program forces a change.

## Industry Items



**Motor Freight Officials Get Inside Look at Fork Truck Plant:** In the interests of further reducing freight damage claims through modern handling methods, 36 freight claim agents of New England motor freight companies visited the Lewis-Shepard Co., Watertown, Mass.

More than \$4 million will be spent at the Westinghouse Electric Appliance Division plant in Springfield, Mass., as the first step in an extensive expansion program.

The entire eastern area of the Baltimore & Ohio system from Jersey City, N. J., to Cumberland, Md., recently became dieselized for freight and passenger services.

With traffic volumes and operating revenues at all-time high levels, United Air Lines in the first nine months of this year recorded net earnings, after taxes, of \$8,024,115, equivalent to \$2.96 per share of common stock. This compared with \$8,263,005 or \$3.15 per share for the same period of 1952.

Fifty Southern Pacific Lines box cars, equipped with Evans DF Loaders at the Evans Products Co. plant in Plymouth, Mich., have been delivered to the SP for active line service.

Net sales of the Hinde & Dauch Paper Co. for the first nine months of 1953 amounted to \$24,615,929.50, a gain of more than 3½ million dollars over the same period last year.

To help fill a growing demand in the trucking industry, The Budd Co. has added to its line of steel wheels the Alcoa aluminum forged disc wheel, which will be distributed through its U. S. and Canadian dealers.

Industrial Truck Sales and Service Co., Greensboro, N. C., has been appointed MAGCOA sales representative in that state.

Underwriters' Laboratories awarded its EE rating to the Transporter, Transtacker and Transtractor models made by the Automatic Transportation Co. for materials handling in "semi-hazardous" operations involving unusual fire risks.

Sales of Fruehauf Trailer Co. for the nine months ended Sept. 30, 1953, established a new record of \$154,387,810; earnings increased to \$3.69 a common share from \$2.66 in the same period of 1952.



**New England Council Conducts Tour of Gair Plant for 85 Executives:** Viewing high speed carton gluing machine in the folding carton department at Robert Gair Co., Montville, Conn., are (front, l. to r.) R. Forbes Perkins, Second National Bank of Boston; C. G. Holland, General Electric Co., Providence, R. I.; F. A. Delforge, Gair; William Watson, Craig Machine, Inc., Danvers, Mass. (rear) Hubert Dean, Otis Clapp Son, Inc., Boston, Mass.; H. R. Westcott, president, Westcott Mapes, Inc., New Haven, Conn.; Richard Secor, Gilbane Building Co., Hartford, Conn.

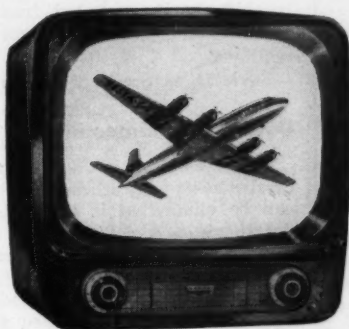


# Admiral uses Delta-C&S airFREIGHT to give sales drives a *Flying Start*

"Real success-insurance for our precisely-timed sales and advertising drives."

That's the low-down on Delta-C&S airFREIGHT you get from Traffic Manager Bill Curtis of Admiral Corp., Chicago, famed makers of television and radio receivers and electric appliances.

"Especially when launching new models or new markets," says Mr. Curtis, "it's important that all outlets be stocked and *ready* when the advertising signals 'go'. Delta-C&S airFREIGHT enables us in a matter of hours to plug any holes in our distribution pattern. Fresh stock arrives quickly and in top condition. Dealers are kept *hustling*—and customers *happy*."



**How to "air" YOUR shipping problem:** for answers to specific questions—or a complete shipping analysis, free—call your local representative of Delta-C&S airFREIGHT. Or write direct to: Delta-C&S Air Lines, airFREIGHT Dept., Atlanta, Georgia.

*All Delta-C&S flights carry airFREIGHT*



Circle No. 13 on Card, Page 34, for more information

## New Steel Warehouse . . .

(Continued from Page 45)

I beams which are welded at the bottom to a 4-in. channel. The dividers, or cross spacers, are 3-in. I beams which are removable, since they rest on welded pieces between the flanges of the upright beams.

Each pocket is about 24 in. wide. This width accommodates a 5-ton lift of bars. Twenty tons of steel are stacked in one upright section.

But because the dividers are removable, the company can easily fill an order for the entire quantity on the bottom by lifting each load above it by crane and then lifting the bottom bundle out.

Hot rolled bars and some small shapes, such as 1-in. angles and small channels are carried in these racks, which will take lengths up to 24 ft. Shorter racks also have been built for cold finished bars 10 to 14 ft long.

### Color Scheme

All steel racks are painted battleship gray. Steel columns in the warehouse are painted green up to 6 ft from the floor. Any items that travel through the air are painted bright yellow, such as the crane blocks and hooks, and sheet lifters.

Scale platforms are bordered with an orange band so the crane operator can spot his load on the scale without difficulty.

E&S decided on a covered loading dock at truck level height which is about 40 ft long. It has no compensating devices for elevation. This is used primarily for material coming from the company's industrial supply warehouse in East Buffalo which is to be shipped out with steel on the same order.

The company may receive an order for three cases of bolts and a ton of steel to go to Pennsylvania. It delivers the bolts from the industrial warehouse to the steel warehouse. The trucker then picks up the bolts and steel at one point.

### Hydraulic Lift

Also, in one bay there is stationed an hydraulic lift capable of handling 2,000 lb which rises from the floor level to any point up to 5 ft. A push-button control station is located on a steel column only 2 ft from the lift.

Any heavy material can be safely unloaded to this unit and by push-button operation can be lowered at once to the inside floor level of the warehouse. If it is to go out immediately, workers merely await until the carrier arrives, push the button and the material rises to the exact level of the truck. The hoist is then returned to its position in the floor

where it can be driven or walked over without difficulty.

The warehouse is divided into three bays which are covered by overhead 5-ton cranes. Three 5-ton scales are used. The building is kept at a constant temperature by three thermostatically controlled heaters.

A car-mover is located at the center-rear of the building where railroad cars enter. Any cars of steel can readily be spotted in any one of the three bays.

### Construction Details

The entire floor area of the warehouse is reinforced 10-in. concrete. Brick is used on the south wall and on the front. The other two walls are of concrete block. The west wall faces the railroad and the north wall later may serve as part of a new warehouse for industrial supplies.

The ribbon of windows is created from corrugated glass reinforced with wire, giving it added strength. Above the glass is corrugated siding. Window mullions are of stainless steel.

A steel roof deck was used, covered with 1 in. of insulation and a regular tar and gravel finish. Ventilators on the roof can be operated by crane operators.

Rolling steel doors are used at the three loading points in the front of the warehouse, as well as at one loading door on the south and at both rail siding doors. All doors are electrically operated by push-button control. •

(Resume Reading on Page 46)



Electrical metallic tubing made at Spang-Chalfant's plant at Etna, Pa., is stacked according to size in bins on the plant's shipping floor. According to the company, orders can be filled without delay, in any size from one-half to two-inch sizes

## Free Literature

(Continued from Page 35)

### New 4,000 Lb. Lift

The all new Mobilift 4,000 lb sit-down fork lift truck is described in a new bulletin released by that corporation. This Model D-424 has an 83 in. hydraulic mast with a lift height of 108 in. A one-piece hood is hinged for easy access to engine compartment where a Chrysler 65 bhp 6-cylinder gas engine is located. Other features are no clutch pedal or gears to shift, easily mounted from right or left and Chrysler Gyrol Fluid Coupling.

Circle 71 on Service Card, Page 34

### Overhead Maintenance

How the difficulties, hazards and excessive costs of overhead maintenance can be eliminated is illustrated and described in a new bulletin on the Barrett Lift-A-Loft. The machine literally makes the maintenance man nearly 20 ft tall for overhead work, enables one man to replace a gang, and imparts safety to many hazardous overhead jobs, the bulletin states.

Circle 72 on Service Card, Page 34

### Two-Way Radio

The General Electric Co. has published a new 6-page illustrated booklet which discusses the application of two-way radio in the materials handling field. Titled "How to Modernize Your Materials Handling Operations," the booklet relates the proven manners by which two-way radio can cut costs, improve efficiency, and increase production when applied in this field.

Circle 73 on Service Card, Page 34

### Tough Tire Jobs

Graphic evidence of off-the-road tires manufactured by B. F. Goodrich in actual service is the subject of a new booklet. Illustrated are typical logging operations, construction work, and strip mine and quarry operations.

Circle 74 on Service Card, Page 34

### New Crawler Model

A new product information bulletin was issued recently by the Schield Bantam Co. in the form of a four-page newspaper called the *Bantam City Press*. The new bulletin features stories, pictures, and specifications concerning Schield Bantam's new ¾ yard 5-ton Crawler Model C-35 as well as specifications and pictures of the all-new, specially designed Crane Carrier, built specifically for mounting of the new Model T-35.

Circle 75 on Service Card, Page 34  
(Resume Reading on Page 36)

# Transportation News

Volume 1

Issue 9

## P.I.E WINS NATIONAL MAINTENANCE AWARD



For Personnel, Equipment and Facilities

### Truck Shop Excellence Contest Won Four Consecutive Times

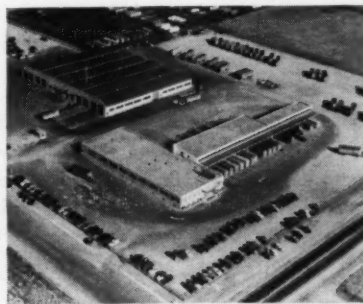
Transport Topics, the American Trucking Association's weekly publication, awarded Pacific Intermountain Express, cross-country motor freight carrier, its Shop Excellence Award at the 1953 A.T.A. Convention, Los Angeles, California. The firm's maintenance program and shop operation was judged the most outstanding of all trucking firms in the nation with fleets of more than 700 vehicles.

Characterized by the publication as, "one of the most efficient, progressive truck operators in the country," P.I.E people have long recognized the importance of a sound, precise preventive maintenance program. The program includes rigid inspections and regularly scheduled maintenance checks as equipment passes through five District Shops and the General Shops in Denver where major overhauls are made on a predetermined mileage basis.

#### Shippers Benefit

Complete preventive maintenance programming has three primary objectives: (1) efficiency, (2) economy and (3) service to shippers. The most important of these three being dependable service to the shipping public.

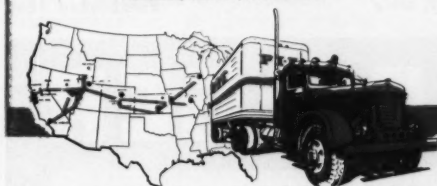
The shops are open to visitors. Advance notice will be appreciated.



General Shops (Upper Left) and Freight Terminal, Denver, Colorado



Scheduled Engine Overhaul



# P.I.E

PACIFIC INTERMOUNTAIN EXPRESS



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 ST. LOUIS, MISSOURI  
 SALT LAKE CITY, UTAH  
 SAN FRANCISCO, CALIF.

SAN JOSE, CALIF.  
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#### SALES OFFICES

BOSTON CINCINNATI CLEVELAND DETROIT INDIANAPOLIS MILWAUKEE NEW YORK PHILADELPHIA WASHINGTON, D.C.



## The Experts Discuss . . .

(Continued from Page 27)

### Purchasing Pallets

By William H. Sardo, Jr.  
Acting Secretary-Manager  
National Wooden Pallet  
Manufacturers Association

I am sure that most of us are familiar with the overall factors which go to determine the proper size and type of pallet for an individual firm's use. These factors are: Nature of material to be palletized, type of packaging, floor layouts and aisles, floor load capacity, headroom space, doorways, elevator openings and capacity.

Judging from the type of questions asked the speaker by pallet users, I am equally certain that too few know the specific technical factors of construction that must be considered and kept in mind in purchasing wooden pallets.

Once the basic dimensions and type of pallet required have been determined, there still remains for consideration three basic elements of pallet specifications. These are lumber, fastenings and construction.

There are six major points to be considered in the selection of the

type of lumber to be used in a pallet, which are as follows:

1. Whether pallet is intended for storage, intra-plant or shipping use.
2. Wear and tear due to repeated entry, striking of forks and hand-truck wheels.
3. Force of possible impact exerted on the pallet, or the strain without collapse from dropping articles on the pallet.
4. Static load or ability of the pallet to stand up under a selected load when performing their storage function.

5. Handling of the pallet by various types of equipment without undue distortion or bending.

6. Tensional strength of pallet, or ability of nails, bolts or other fastenings to hold together component parts of the pallet, and the lumber from breaking.

The second element of pallet specifications is the fastening of wooden parts. There are a number of acceptable fastenings, namely drive screws, annular ring or fettering nails, and bolts and nuts. Of these the bolted type of construction is considered the most durable, but at the same time is the most expensive. Drive screws of the spiral or helical type are con-

sidered the next strongest type of fastening. The annular ring nail, when properly manufactured with sharp, well-defined grooves, is a satisfactory alternate.

### Method of Driving

Next in importance to the fastener itself is the method of driving it. Fasteners should be countersunk, and should be driven into predrilled holes in the deckboards. Pallet nails should be staggered approximately  $\frac{1}{4}$  in. either side of the center line of the stringers.

It is estimated that fasteners cause about 80 per cent of all pallet structural troubles. Failure at the joint due to faulty or improper fastenings, and there are about 36 joints in the average size pallet, is by far the most frequent pallet maintenance problem.

Following are common user practices which lead to poor pallet service.

1. The practice of issuing poor specifications which are lacking in detail, and which opens up the bidding to manufacturers of inferior quality pallets.

2. Accepting on delivery of pallets which do not meet the issued specifications.

3. Acceptance of pallets without brand or stencil identification of the manufacturer, which makes it impossible to determine their source after they have been in use.

## We build the vans— (customers build our reputation)



The coast-to-coast recognition which Gerstenslager Custom-built Vans have established in warehousing, transfer, and storage circles is a natural result of Gerstenslager traditions, Gerstenslager standards of quality, and Gerstenslager manufacturing methods. But in the final analysis all we can do is to build the best vans we know how to build. Our customers build our reputation.

At this season, as 1953 draws to a close and 1954 waits around the corner to step on the stage, we take occasion to thank all Gerstenslager van owners for their recognition and confidence—and to wish the entire highway transportation industry a Merry Christmas and a Happy New Year.

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Wooster, Ohio  
Established 1860

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*From Wooster to the World of Transportation*

Circle No. 15 on Card, Page 34, for more information

4. Failure to anticipate pallet requirements in advance, which can easily force the legitimate manufacturer to either reshuffle production schedules or to sublet your business to another.

5. Improper care of pallets after they are put into use.

## Standardization

By Nathaniel Warshaw

Manager, Materials Handling Div.  
Market Forge Co., Everett, Mass.

Today's problem is—how can we get more production and lower cost distribution by materials handling. One way is to "Standardize."

The unfortunate feature of the materials handling industry is that it grew up before we knew it, and there was not too much engineering analysis given the different elements.

One man or group of men cannot put over standardization in this industry. I also know that several groups have been working on standardization of certain elements for some time. Their accomplishments have hardly created a ripple. This is not due to lack of sincerity or effort. It is due to the immensity of the task and the lack of public concern.

We all know what standardization has meant in the automotive industry. This was relatively easy because one industry with a common goal was involved. The same with the electrical industry.

I suspect that the packaging industry has done its share, too, and has helped the materials handling industry greatly by so doing. If you adopt certain standard, basic size packages—you then can use standard cartons and these will determine the size of the pallet, skid, truck, conveyor, and so forth.

This is wonderful but do the manufacturers of pallets, skids, floor trucks and conveyor know what you are doing and taking advantage of it in standardizing their product? I know that the Navy has done a great deal along this line and now use only two size pallets: a 40x40 and a 48x48 which in turn means only two sizes of pallet lift trucks, one with 40 in. forks and one with 48 in. forks. I also have reason to believe that one size or the other will be dominant.

By and large, the importance of standardization to permit greater economy in handling cannot be disputed. The big question is, How? No one, frankly, seems to have the answer yet. The problem will not be solved by avoiding the issue.

I sincerely believe that only by frequent and constant discussion at meetings of this sort, in our trade magazines, at industrial association gatherings, etc., will the barrier which is preventing this important step being taken be lifted. •

(Resume Reading on Page 28)

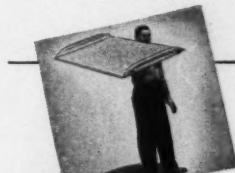
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Designed to exact specifications, Magliner dock boards are custom engineered to overcome any normal or unusual loading problems, regardless of location complexities, area size, load to be handled, or equipment used! Of all-magnesium, bridge-design construction, these low cost, high output units combine the amazing lightness... the amazing strength of the world's lightest structural metal! They are capacity rated to handle the heaviest load requirements. Get greater returns on your handling dollar! Get the complete story on low-cost Magliners for your docks. Write for information bulletin DB-204R.



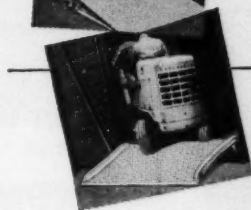
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Bridge-design construction. Capacity-rated to handle the heaviest load requirements.

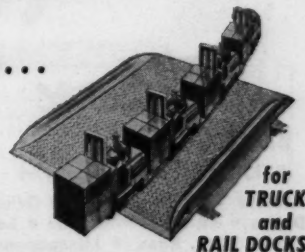


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# Piggy-Back Plan . . .

(Continued from Page 32)

Some of the more optimistic overtones in recent months have been generated by the development of specialized carrying and loading equipment designed to meet the needs of the plan.

General Motor's Electro-Motive Division recently announced the most comprehensive equipment program proposed to date. The GM plan embraces a specially built flatcar, a modified highway trailer, a new side-loading lift truck, and two terminal lay-outs.

The all-welded flat car has a depressed center sill, is designed to carry two 35-ft trailers, and has a load limit of 132,000 lb. Fifth wheel type stanchions at each end of the car and side struts hold the trailers in place.

Clark Equipment Co., in conjunction with the GM announcement, displayed a modified 26,000-lb capacity truck. It has front wheel drive and rear wheel steering. The truck is capable of handling 35-ft trailers.

Usual forks on the Ross-built unit

have been toed in to meet at point 59 in. in front of the truck bumper. At this point a pin has been installed to engage the trailer towing plate. Tower members have been strengthened and the normal tilting mechanism eliminated to provide additional capacity.

## Side-Loader Lift

Baker-Raulang Co. has announced a giant version of the Baker-Lull Traveloader for piggy-back service. One fork at each end of the unit (instead of two forks in the middle) gives the machine a 100,000-lb capacity. This unit actually lifts the trailer and places it on the flat car.

One man operates this side loader. He can control its overall length—making it longer or shorter to accommodate different size trailers—by hydraulic controls in the cab. Airplane tires are used on the wheels.

Automatic Transportation Co. is developing a special fifth wheel trailer towing tractor type truck in

conjunction with Pullman-Standard's piggy-back program (see below). The Automatic unit has a towing capacity of 68,000 lb and an elevating capacity of 35,000 lb. It resembles in appearance the model shown in the Pullman-Standard illustration accompanying this article.

The electric driven truck would have two speeds, one for lifting and one for towing and long hauls. Although a one man operation, two bucket-type driver seats are provided to allow the driver to change positions for better efficiency.

Forward, backward and transverse movements are provided for. The elevating platform can travel through a vertical rise of 21 in., from 38 in. at the bottom to 59 in. at the top.

## Pullman-Standard

First demonstrated a few months ago at the Railroad Show in Atlantic City, N. J., the Pullman-Standard program provides fast loading and unloading by the side-loading unit. A pair of merchandise loaded trailers can be backed from a car-side dock onto an equipped flat car spotted on a depressed track.

Once on the car, the trailer is latched onto a solid bumper-like bulkhead, and each trailer's king pin is set down and locked into a stanchion.

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## Coordination

Two of the most serious piggy-back road blocks, financing and inter-industry cooperation, are tackled in a plan advanced by the Rail Trailer Co., of Chicago through Van Car Corp., a subsidiary. This plan also was announced in conjunction with the GM scheme.

Van Car will purchase the GM flat cars for lease to railways, and will purchase suitably equipped trailers for lease to motor carriers. In addition, it will provide the following services on a contract basis:

For motor carriers it will maintain constant contact with the railroads to insure agreed-on schedules. For the railroads it will operate the terminals where trailers are loaded or unloaded, furnishing all necessary personnel and equipment.

## Labor's Attitude

From the beginning, organized labor maintained a suspicious attitude toward the plan. Recent developments, however, indicate that the piggy-back idea is getting at least tolerant reception from both labor factions involved. Labor approval, of course, is essential if the program is to succeed.

W. P. Kennedy, president of the Brotherhood of Railroad Trainmen, in October asked Commissioner Knudson to investigate the program "for the ultimate purpose of declaring a public policy supporting it as vital to the national defense."

Dave Beck, Teamsters president, has stated that his union will not oppose "technical progress in the trucking industry." Both unions, however, want further assurance that the plan will not infringe on their respective "rights." The teamsters in particular are advocating a "wait and see" attitude.

## Experimental Basis

In 1932 the Chicago, North Shore and Milwaukee put a piggy-back plan in operation, but it was discontinued in 1940. Other railroads which have offered the service at one time or another and then discontinued it include the Rock Island; Denver and Rio Grande; Chicago, South Shore and South Bend; Gulf, Mobile and Ohio, and the Chicago and Eastern Illinois.

The most extensive program actually in operation today is the New York, New Haven and Hartford plan mentioned earlier. Southern Pacific recently launched a program for Pacific Motor Trucking Co., its highway affiliate. Both Canadian national railroads are operating overnight service between Toronto and Montreal for their own express traffic.

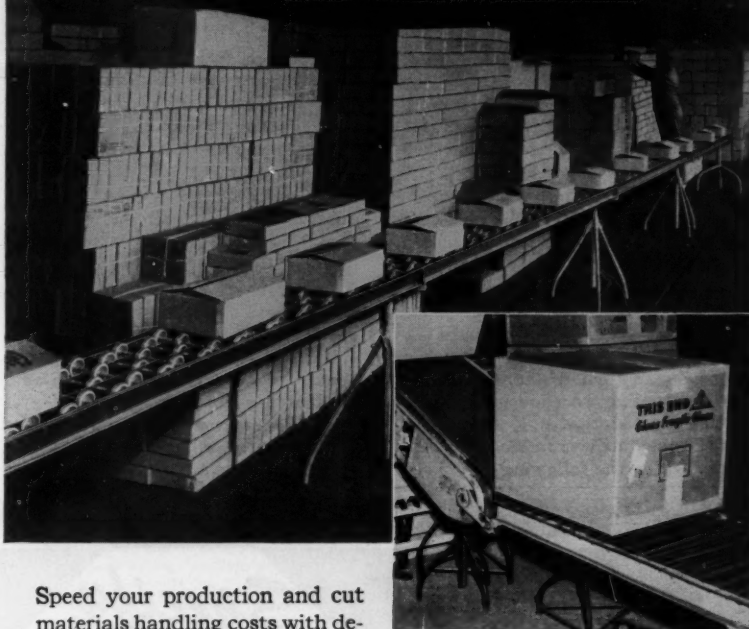
Other railroads operating or considering the operation of piggy-back service include Chicago and North Western, Chicago Great Western, and Central of New Jersey, Reading and Baltimore and Ohio in combination.\*

(Resume Reading on Page 33)

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Circle No. 18 on Card, Page 34, for more information

# Pallet Vault Makes . . .

(Continued from Page 43)

Through the use of proper piling, we could pile up to heights of 9 and 10 ft on a 4- by 6-ft pallet with perfect security. That discovery enabled us to use the full height of the building without damage or toppling of any of the furniture with the help of strings to tie the wobbly pieces in place. This idea developed to the extent that in some 1500 loads we were able to pile to these greater heights without any danger of accident.

This proved satisfying. In fact, it was so successful and reduced our labor and handling costs to such a degree that we decided to investigate the possibility of using this method for permanent storage purposes.

After experimenting with the pallet, we tried to develop a cheaper pallet. About six weeks to two months was spent in attempts to develop a paper or cardboard pallet, but the resulting product was so expensive, thus prohibitive, that it was useless.

At this point, we decided we needed some help. We made a survey among 25 of the leading warehouses throughout the United States to find what methods they utilized in handling furniture, asking the following questions.

## Storage In

1. Do you unload and check a storage lot at the warehouse dock?
2. Do you carry it to the elevator?
3. Do you unload from elevator on an upper floor?
4. Do you wrap for storage?
5. Do you carry to piling area?
6. Do you pile for storage?

## Storage Out

7. Do you unpile the lot?
8. Do you carry to elevator?
9. Do you unload from elevator?
10. Do you unwrap?
11. Do you check and load onto the van?

We received 23 answers to this questionnaire, and all but two companies handled a storage lot eleven or more times.

The survey convinced us other warehouses were duplicating the same outdated handling methods we used. With the cooperation of my warehousemen we made an objective analysis of our entire warehousing system. We eventually eliminated seven of the eleven operations.

We also asked: Do you use wheeled

platforms or skids? If so, what do they cost?

Six companies used wheeled platforms, costing between \$20 and \$60 each. Pallet Vault platforms cost us about \$3.70 each.

After developing a way to secure furniture on a platform without sides up to heights of 9½ ft, and transporting loads on and off elevators with safety, we experimented with various covers to eliminate individual wrapping.

This proved more difficult than we had anticipated since it was only after some thirty experiments with a variety of materials and methods that we arrived at a cheap, rigid, compact, and simple covering which can be used indefinitely. We were then satisfied that we had developed something of value in warehouse operation.

The cover consists of two heavy corrugated board sides which are held in place on the pallet by two specially constructed lateral-retaining strips nailed on the side of the pallet. These corrugated box board sides are machine taped or hinged to fit uniformly. The sides are so constructed that they lock together to form a dust-proof joint. The top is constructed of heavy Kraft Paper with sides that slip over the top of the pile, adjusting to the height of the pile and fitting closely to the walls of the box-board sides.

To develop efficient operating procedure for this method, we cleared an



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area in our warehouse which would enable us to experiment with handling methods.

The results show that we use less aisle space than is used in ordinary storage. While a 7½ ft aisle is necessary, we can store six Pallet Vaults on each side of an aisle to a depth of 36 ft. Previously, an 8-10 ft piling depth was the limit for the old method. Now, only one cross aisle is necessary. Even greater piling depths can be used as it takes less than a minute to place a jack lift under a Pallet Vault and wheel it into the aisle.

As stated previously, our pallets were originally made to 4 by 6 ft dimensions which made it necessary to clear a special area for the installation of the Pallet Vault. By cutting 6 in. off the pallets, making the size 42 by 72 in., any warehouse with four foot aisles can install this method without any preliminary rearrangement. We made this change eight months ago because we wanted to extend the cost-saving features of Pallet Vault to the old lots going out of storage, which would have been handled by the old piece-by-piece method.

An added feature of the 42 by 72 in. pallet is that we can store new lots in the vacant spaces where four foot aisles exist. When, in time, enough new lots are on the floor, we can convert to a 7½ ft aisle at a small cost by rearranging with the jack lift.

#### More Direct Control


Certain warehouse practices have developed since using the Pallet Vault which give management more direct control over operations. These include: All incoming storage is unloaded and tagged by the van crew in a designated area on the first floor of our warehouse. The warehouse crew then places the articles on a pallet which completes the entire handling operation with the exception of wheeling the pallet on the elevator then into position in the piling area. This eliminates handling operations except on the first floor, and four out of the six handlings necessary with incoming storage.

On the outgoing storage, the Pallet Vault is wheeled down to the first floor, checked and unloaded on to the van, eliminating at least three handling operations.

Old lots are loaded on to the pallets on the upper floor and brought to the first floor, thus eliminating two or more handlings—representing a 50 per cent saving in costs.

Palletized storage needs greater care in piling furniture. Goods cannot be slammed, thrown or mishandled in any way. A great selling point to the customer.

Through this system of palletized storage, lots may be moved around in a minute or two, making badly needed space available immediately,  
(Please Turn Page)

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## "Trailer-Loading Time Cut in Half... WITH OUR MAGCOA PORTABLE YARD RAMP"

— Reports Frank Gray, Traffic Manager, Universal-Cyclops Steel Corp., Bridgeville, Pa.

"We now load 400,000 lbs. of steel products in an 8-hour shift; have released two men for other duties—direct benefits of our MAGCOA Yard Ramp," says Mr. Gray.

Universal-Cyclops Steel Corporation was one of the first to cash in on the time-money-and-manpower savings possible with the revolutionary new MAGCOA Portable Magnesium Yard Ramp that permits truck-loading and car-loading from ground level.

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- One man moves it.
- Hydraulic lift helps position it.
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- Capacities to 16,000 lbs. in five standard sizes.
- Exclusive MAGCOA quarter-round safety curbs and rounded end-castings protect workers, lift trucks and loads.
- Low cost—less than conventional stationary docks in most of U. S.
- Prompt delivery from mass-production factory.
- Enthusiastic users from Coast to Coast.

Look into all the facts! Send for literature showing how the new MAGCOA Portable Yard Ramp can speed ground-level loading for you.

At the same time, look into how MAGCOA light-weight, heavy-duty Magnesium Dockboards can speed your dock-level loading. Use the handy coupon.



Yard Ramp features one-man positioning



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Circle No. 21 on Card, Page 34, for more information



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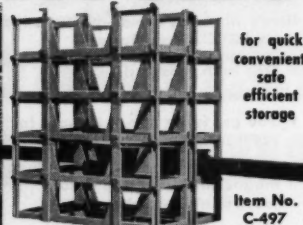
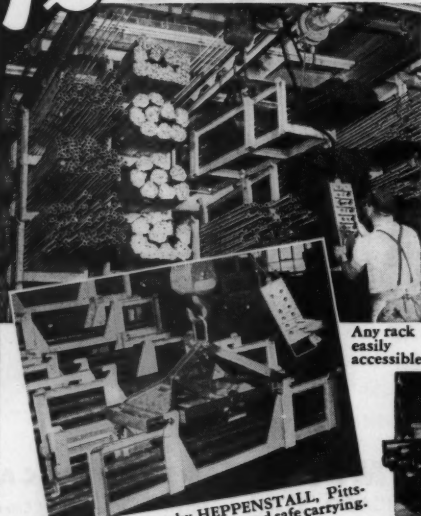


**WISCONSIN MOTOR CORPORATION**

World's Largest Builders of Heavy-Duty Air-Cooled Engines

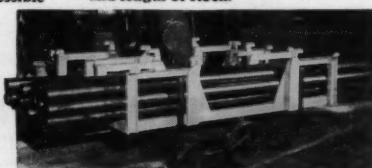
MILWAUKEE 46, WISCONSIN

## PS BAR RACKS



Item No. C-497

Handling and storage of steel shapes simplified for one-man operation. Using overhead crane for storage in tiers, rack selection is no problem. Design permits bar selection from any rack without disturbing tiers. Built to any capacity and length of stock.



Easily placed on trucks for removal to machines not under crane.

When Ordering Always give "item" number; this will help prevent error. Write for catalog.

DESIGNED AND MANUFACTURED BY

**Palmer Shile Co.**  
16054 FULLERTON AVE., DETROIT 27, MICH.

Circle No. 22 on Card, Page 34, for more information

## Pallet Vault . . .

(Continued from Preceding Page)

whereas in dead or unpalletized storage, such mobility is highly improbable. This is definitely a step forward in giving mobility to warehouse operation.

Some warehouses do not have elevators to take eight and nine foot heights. We handled this problem in our warehouse by cutting a space five feet wide in one of our doors which flaps up and down when a pallet of goods goes through. Another solution is to pile the pallet as high as possible and carry the light pieces on the elevator, placing them on the palletized load after it arrives on the floor.

One of the things which makes progress difficult in any field is the resistance which is encountered to a new idea. I know, because I have felt the same way on occasion.

In the experimental process, some sixty rooms in our warehouse were torn out for use as the testing grounds. We piled and repiled; we practiced with aisle space and with maneuvering. We practiced in all sorts of ways to assure ourselves that this method was what we wanted and that it met the standards for this type of handling.\*

(Resume Reading on Page 44)

## SPEED?...SAFETY?...SAVINGS?

THEY'RE YOURS WITH A

## LO-HED CAR PULLER



With a Lo-Hed Car Puller at your siding, cars will be loaded and unloaded a lot faster. You'll also eliminate a cause of accidents, cut demurrage costs and abolish shifting charges . . . Lo-Hed Car Puller saves money inside a plant, too. Rugged, electrically-driven, it pulls anything within its capacity. Write for full facts.

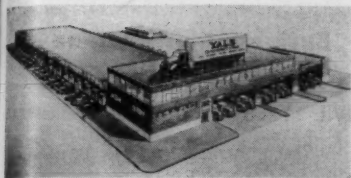
LO-HED MEANS LOW OVERHEAD



**AMERICAN ENGINEERING  
COMPANY**

2524 Aramingo Avenue • Philadelphia 25, Pa.  
AE Products are: Taylor and Perfect Spread Stokers, Marine Deck Auxiliaries, Hydramite and Hie-Shaw Fluid Power, Lo-Hed Hoists, Lo-Hed Car Pullers.

Circle 23 on Readers' Service Card  
DISTRIBUTION AGE



**Million Dollar Truck Terminal:** Yale Transport Corp. is nearing completion of 40,000-sq ft terminal, including 8,000 ft of air-conditioned offices, large maintenance shop, and 43 truck dock bays located on three sides. A 75-ft 3-D sign is planned for the roof

## Traffic Items

The annual dinner of the Manitoba (Canada) Division of the Canadian Industrial Traffic League will be held at the Royal Alexandria Hotel in Winnipeg, Jan. 13.

A. H. O'Rourke of the Norfolk, Baltimore & Carolina Line, has been installed as president of the Hampton Roads (Va.) Chapter of the Delta Nu Alpha.

Frank P. Martino, traffic and credit manager, Metals Disintegrating Co., Elizabeth, N. J., has been elected to the presidency of the Traffic Club of Newark, N. J.

The annual banquet of the Transportation Club of Atlanta, Ga., will be held January 22, 1954.

The Los Angeles Traffic Managers' Conference will hold their 1953 Annual Dinner in the ball room of the Biltmore Hotel on Thursday evening, Dec. 3. Vice Admiral Francis C. Denebrink, USN, Commander Military Sea Transportation Service, will be guest speaker.

The Traffic Club of Eastern Connecticut celebrates "Ladies' Night" with a dinner and dance at the Roof Garden of the Mohican Hotel, New London, Conn., on Dec. 5.

Francis O. Case, president, Glen Alden Coal Co., will be the principal speaker at the Dec. 2 meeting of the Wyoming Valley Traffic Club at the Kingston House, Kingston, Pa.

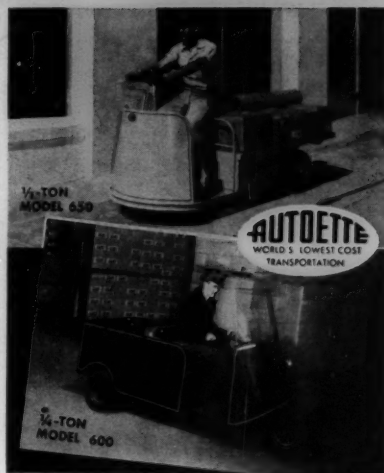
The Women's Traffic Club of Pittsburgh, Pa., will hold its annual Christmas party at the University Club, Dec. 12.

The Christmas luncheon of the Cincinnati Traffic Club will be held at the Sinton Hotel, Dec. 15.

The annual "Members Only" Christmas party of the West Towns Traffic Club, Bellwood, Ill., will be held Dec. 5 at the Clearing Club rooms.

The Chicago Transportation Club will hold its first annual "Motor Night" dinner-dance, Dec. 1, at the Paradise Ball Room.

The date of the annual banquet of the Green Bay Traffic Club, Wis., has been set for Dec. 8, at the Northland Hotel.



## 2 great new ELECTRIC AUTOETTE Pickup Trucks

Electric AUTOETTE Pickup Trucks are ideal for all types of light hauling in industrial plants... docks and warehouses... resort hotels... movie lots... golf courses... estates and ranches.

Both the 1/4-ton and 1/2-ton AUTOETTE Pickups are sturdily built to give years of dependable, trouble-free service. Because there's no engine or complicated parts, AUTOETTES are free from costly repairs and adjustments.

### Costs only 3¢ a day

AUTOETTE Pickup Trucks are famous for their amazing economy. Only 3 cents for electricity for 12 hours of daily hauling—30 miles of travel. Less than a dollar a month—\$10.00 a year—1/5 cent per ton-mile!

At the end of the day, just plug the Taper Charger into any electric outlet. The batteries are charged overnight—ready for another day of perfect service.

AUTOETTE Pickup Trucks sold by:

Autoette Sales & Service  
Los Angeles, Calif.  
Blood Enterprises, Inc.  
Long Beach, Calif.  
Western Autoette Sales  
Salt Lake City, Utah  
Rapid Sales Corporation  
Maywood, Ill.  
Guelich & Probel, Inc.  
Buffalo, N. Y.  
B. F. Shearer Company  
Seattle, Wash.  
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Portland, Oregon  
Wm. J. Trombley  
Dallas, Texas

For complete information and colorful AUTOETTE brochure, sign and return coupon below.

**AUTOETTE, Inc.** • Dept. 612  
730 West Esplanade  
Long Beach, Calif.

Please send complete information about AUTOETTE Pickup Trucks

Name.....

Address.....

City.....

State.....

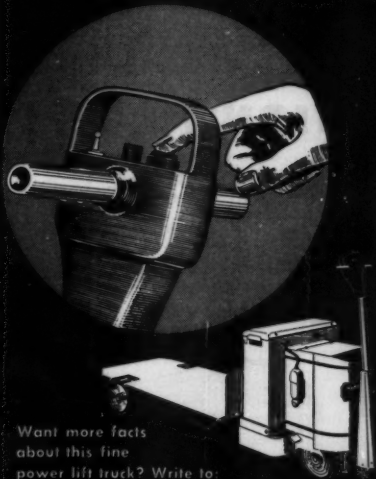
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STUEBING DESIGNED • STUEBING ENGINEERED • STUEBING BUILT

## Hydroelectric LIFT TRUCKS

give you true "Finger Tip Control"



Want more facts about this fine power lift truck? Write to:



**LIFT TRUCKS**  
INCORPORATED

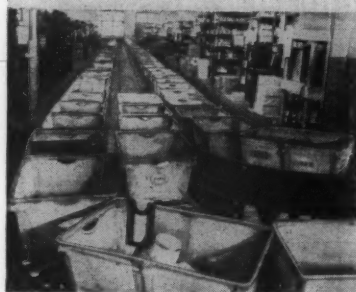
2423-31 SPRING GROVE AVE.  
CINCINNATI 14, OHIO

There is a model for every purpose to handle any kind of material.

Circle No. 24 on Card, Page 34, for more information

For the best  
in  
**CANVAS**  
Conveyor and  
Chute Baskets

LOOK  
FOR  
**Lane**



Built to take a beating in all order-filling applications, *only* this economical Lane Style 20 Conveyor and Chute Basket incorporates *all* these quality features for *long, dependable service at very low cost.*

- Extra-heavy body of Lane duck with specially stitched seams, stitches and snag-proof rivets.
- Sturdy leather reinforcements on every corner and around entire rim.
- Specially tapered sides for easy nesting, space-saving storage.
- Light-weight, extra strong spring-steel frame with long-wearing, hardwood bottom runners.

**STANDARD SIZES AVAILABLE**

No.	Long	Wide	Deep
1	20"	14"	8"
2	24"	16"	11"
2½	28"	16"	11"
3	30"	16"	14"

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there is only *one* Lane. Always look for the Lane mark—to be sure!

Canvas Basket Craftsmen Since 1894

**Lane**

W. T. LANE & BROS., INC., Poughkeepsie, New York

Circle 26 on Service Card, Page 34

**... On Its Wings**

(Continued from Page 49)

2. **Saving of executive time.** Users of business aircraft claim a 30 per cent saving of time. They relax or work in the comfort and privacy of their own flying offices or showrooms with perhaps an air-to-ground telephone to keep in touch with minute-to-minute developments. They have timely, complete, personal contact with all their offices and cut travel time as much as 80 per cent covering more territory with less travel.

**60% Savings**

3. **Economy.** Some users report as much as 60 per cent saving over other transportation costs with less executive time in unproductive travel, fewer enroute meals and sleeping accommodations, no public transportation tax, no extra fares for extra passengers, hence lower expense accounts.

4. **Prestige.** Favorable customer reaction to the use of the latest business facilities is but one of the intangible benefits. A plane with a company name landing at or parked on any airport is better than a billboard and customers like to be entertained by a flight.

**Business Multi-engine  
Aircraft Fleet**

**CIVIL TYPES**

Douglas DC-3	275
Douglas DC-4	2
Aero Commander	86
De Havilland Dove	55
Beechcraft Model D18	675
Lockheed Lodestar	210
Lockheed Model 10	3
Lockheed Model 12	2
Grumman Mallard	53
Grumman Widgeon	140
Convair 240	2
Convair 340	2
Beechcraft Twin Bonanza	3

**Total** 1508

**CONVERTED MILITARY TYPES**

Lockheed Ventura	17
Martin B-26	6
Douglas B-23	15
North American B-25	25
Boeing B-17	3
Convair B-24	4
Douglas A-26	25

**Total** 95

**Grand Total** 1603

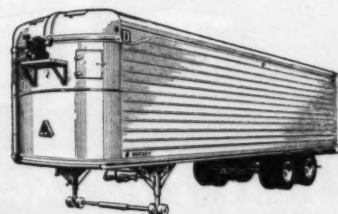
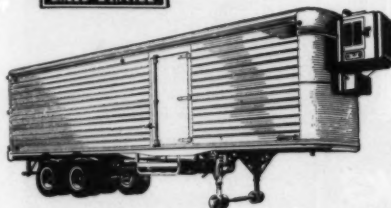
(Resume Reading on Page 49)

**IS YOUR CARGO**

**Fragile?  
Perishable?**

**HERE'S PROTECTION PLUS!**

Choose Dorsey insulated trailers for positive temperature control, plus the gentle "cradling" ride of the famous Dorsey-Reyco Tandem.



The complete line of Dorsey Trailers is sold and serviced by a national network of Authorized Distributors. See the Yellow Pages.

**DORSEY TRAILERS** ELBA, ALABAMA.

Circle No. 27 on Card, Page 34, for more information

DISTRIBUTION AGE



## WAREHOUSING

During the first several months in this year, higher courts rendered many important decisions, knowledge of which will assist officials and employees of warehouse companies to prepare to avoid similar legal controversies. Also, as the herein citations are new, these decisions may be advantageously used by readers and their lawyers to win unavoidable law suits. An important fact is that many of these new higher court decisions establish new law, by reversing older law.

### Is criminal intent implied when a warehouseman misappropriates or converts goods?

Criminal intent of a warehouseman, who misappropriates or converts stored goods, is implied. Therefore, a warehouseman who violates Section 714m(c), Title 15 of the United States Code Annotated may be fined and sentenced to prison although his "criminal intent" is not proved.

For example, in *H— v. United States*, 203 Fed. Rep. (2d) 81, the testimony showed facts, as follows: A warehouseman named H— was convicted by a lower court of willfully stealing, concealing, removing and disposing of and converting to his own use certain wheat which was property of Commodity Credit Corporation.

Actually the testimony showed that H— contracted with the United States to store grain for the CCC and the warehouseman was obligated at his own expense to take all necessary steps to keep it in good condition. The testimony showed that H— commingled grain, for which CCC held 95 per cent of the warehouse receipts, with grain that H— bought speculatively for his own account.

H—'s main defense before the jury was that, while he breached a civil contract and was bankrupt, the Government had failed to prove his criminal intent beyond a reasonable doubt. On that basis, his attorney asked the jury to return a verdict of not guilty.

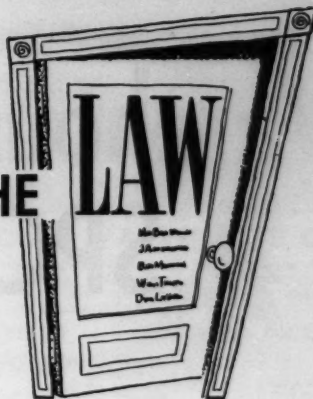
The lower court convicted H— of 31 violations and sentenced him to four years imprisonment for each offense to run concurrently. The court also fined him \$5,000 on each of two counts 5 and 10, for selling grain owned by the Government to pay off certain notes he owed a bank. The higher court upheld the lower court's conviction, saying:

"This testimony of the defendant himself, together with much other evidence was amply sufficient to support the verdict. The charge of the court was not only free from prejudicial error, but was eminently fair to the appellant. We think he had an impartial trial before a good jury."

## W WITHIN THE LAW

By Leo T. Parker

Legal Consultant,  
Distribution Age



So, therefore, while he may not have had any criminal intent, when commingling his own grain with grain owned by the CCC, and later selling a part of the grain, yet he was guilty of violating a United States Statute which provides that whoever shall willfully steal, conceal, remove, dispose of or convert to his own use any property owned or held by, or mortgaged or pledged to the CCC, shall be punished by a fine of not more than \$10,000 or by imprisonment for not more than five years, or both. Hence, without definite proof of his criminal intent he was subjected to a heavy fine and a prison sentence.

### If part of stored goods is destroyed or damaged, is warehouseman liable for entire lot?

Recently a higher court held that if part of a lot of stored goods is destroyed or damaged, the warehouseman is liable for the value of the whole lot, particularly if he fails to turn over to the holder of warehouse receipts or certificates the part of the lot not damaged. Also, this court held that no storage charges can be collected by a warehouse company on goods fully or partly destroyed or damaged.

For illustration, in *B— v. T— Warehouse Co.*, 110 Fed. Supp. 729. Testimony showed facts, as follows: A warehouse company had storage facilities at Denton, Cleburne, Lewisville, and Bonham, and one in the state of Oklahoma. The certificates of storage issued by the warehouse company were negotiable, and issued for the purpose of being security for loans made by banks, and the bank making such loan would, in turn, secure from the CCC, the amount of such loan for replacement of its own funds. The loans were made by a national bank.

One day a fire occurred and a quantity of peanuts was destroyed, but those which were not in the proc-

essing shed were not injured in any manner.

In subsequent litigation the higher court held that failure of the warehouse company to turn over, for liquidation, the entire amount of peanuts that it had receipted for, less such amount as was destroyed in the fire, makes it liable to the holder of the warehouse certificates for the full value of all the peanuts which the warehouse company had accepted for storage.

In other words, this court held that failure of the warehouse company to deliver for benefit of the holders of the warehouse certificates all peanuts not damaged by the fire resulted in the warehouse company being liable for the full value of all the peanuts the warehouse company had accepted and received for storage. The court said:

"The contract of storage called for the payment of storage charges, and there must be deducted from such reasonable market value of the peanuts as were not turned over, the amount of such storage charges. The amount of such storage charges is the sum of \$9,021.90. The reasonable market value of the peanuts not turned over, is \$45,633.75. The balance, therefore, of \$36,611.85 is the amount of recovery in this case."

## TRANSPORTATION

During the past few months higher courts in different localities rendered several unusually interesting and informative decisions involving common carriers. We shall briefly review the cause and outcome of these important law suits.

### Is trucking firm relieved from liability for damages by rules and regulations in tariff schedule?

Considerable discussion has arisen from time to time over the legal question: "Is a trucking company relieved from liability for damages to shipped (Please Turn to Page 84)"

# Warehouse SPOTLIGHT

## Men In The Spotlight



**S. A. Kadane** of Dallas, Tex.—newly elected chairman of NARW's Southwest chapter. **R. T. McKenzie** of Dallas, Tex.—elected vice-chairman and **S. C. Wentworth** of San Antonio, Tex.—re-elected secretary.

**Charles D. Watson**—superseded as manager of the Glassboro Cold Storage Corp., Glassboro, N. J., by **B. A. J. Mosey**. He will continue as vice-president and consultant.

**Andrew W. Herron, Jr.**—retired as general manager of warehouses, Jones & Laughlin Steel Corp. **Donald L. Ande**, acting general manager and manager of sales of the warehouse division will succeed him.

**C. Russell McClellan**, traffic manager, Northwestern Transfer Co.—will direct the Portland operations for Emery Air Freight Corp.

**T. E. Witters**, president and general manager of the Baltimore Fidelity Warehouse Co. and **A. M. Burroughs**, assistant to the president, The Weicker Transfer & Storage Co., Denver, Colo.—retired.

**D. H. Overmyer**, president, D. H. Overmyer Warehouse Co., Toledo, Ohio—elected to the board of directors of the Transportation Association of America.

Northwestern Transfer Co. has been selected as Oregon agent for Emery Air Freight Corp., a nation-wide air forwarder.

## State Warehouse Act

The Legislative Drafting Committee of the Council of State Governments meeting in Washington recently voted to postpone indefinitely any further action or consideration of the proposed State Warehouse Act. The Committee made no recommendations for or against the Act.

—DA—

**Merchants Transfer & Storage Co., Davenport, Iowa**, is celebrating its golden jubilee. **Arthur C. and Elmer C. Schick**, sons of the founder, and their sons now operate the business.

—DA—

## Tidewater Expands

The Keystone Warehouse Co., Buffalo, N. Y., an affiliate of the Chain of Tidewater Terminals & Inland Warehouses, has purchased a 150,000-sq ft warehouse in Dunkirk, N. Y., from the Cleveland Storage Co., Inc. The Dunkirk warehouse will be operated by a newly formed subsidiary of Keystone-Tidewater-Cleveland Storage Corp. The property is appraised at more than \$1 million.

—DA—

The Committee on Defense Transportation and Storage has been reestablished under the chairmanship of the Under Secretary of Commerce for Transportation.

## Forecast for '54

By **Wilson V. Little**

Executive Secretary  
AWA, Merchandise Div.

There's considerable talk these days in the newspapers and business press to the effect that the national economy is slowing down and is "no longer operating on an overtime basis." The lush times for business in general during the emergencies are dropping off, it is being said. We are told that we are facing a "readjustment" period in the near future and that the economy is on its way back to "normalcy."

However these prognostications may eventuate, public merchandise warehousemen face the future with confidence. Better than many other lines of business, their industry has weathered the wars, the booms, and the depressions of the past sixty years. That is because the service that they provide—storage—is a basic economic function that operates, for one need or another, in good times and bad. Of course, when the country's economy is flat on its back and business failures mount, public merchandise warehousemen can't be overly prosperous, either; but they seldom go broke.

The prognosticators assure us that we are not in for a depression but that, in fact, business is to "remain very good by anything but boom-time standards." In this connection, they point out that our population is increasing 2.5 million every year. To take care of these additional people, more consumer goods of all kinds will have to be produced, and a large part of this new volume will pass through the plants of public merchandise warehousemen.

The country's production facilities are in position to provide for the nation's constantly expanding economy. Likewise, the public merchandise warehousing industry, as always throughout its long history, is geared to furnish, effectively and at low cost, the storage and distribution services. •

For Additional Warehouse News, See Chuting the News, Washington DA and Within the Law

**BIRMINGHAM, ALA.**

Established 1913

**American Transfer & Warehouse Co., Inc.**

831 N. 19th Street Birmingham 2, Ala.

*Merchandise and Household Goods*

Warehouse, Concrete and Steel Construction—150,000 sq. ft.—sprinklered. ADT Alarm. Private siding, Frisco railroad. Pool Car Distribution and heavy machinery hauling. 50 Trucks of All Types.

**BIRMINGHAM, ALA.**

1880—Seventy-three Years of Service—1953

**HARRIS TRANSFER & WAREHOUSE CO.**

• South 13th St., Birmingham •

*Merchandise and Household Goods*

• STORAGE • CARTAGE • DISTRIBUTION • FORWARDING

*Pool Cars Handled*

Member of A.C.W.—A.W.A.—N.F.W.A. Agents for Allied Van Lines, Inc.

**BIRMINGHAM, ALA.**

Over 125,000 Sq. Ft.

**THOMAS N. NELSON & CO., Inc.**

1000 North 16th St. 53-2468

2301 First Ave. No. 54-4591

TWO WAREHOUSES CENTRALLY LOCATED FOR

**MANUFACTURERS & WHOLESALE GROCERS**Warehousing  
Local DrayageNEW YORK 11  
11 WEST 42ND ST.  
NEW YORK 36Pool Car  
Distribution**BIRMINGHAM, ALA.****STRICKLAND TRANSFER & WAREHOUSE CO.**

112 South 14th St., Birmingham

General Merchandise Storage and Distribution

Pool Car Service a Specialty—Motor Truck Service  
Centrally Located—Free Switching from All R.R.s**DOOTHAN, ALA.****SECURITY BONDED WAREHOUSE**500-501 East Commerce Street  
POOL CAR DISTRIBUTIONSERVING  
S.E. Alabama  
S.W. Georgia  
N.W. FloridaReceiving—STORAGE—Handling.  
Motor Freight Service to all points.  
6-car Private Siding. Reciprocal Switching.  
Efficient—Conscientious Branch House Service.**PHOENIX, ARIZ.**

Telephone: ALpine 4-2566

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TRANSFER and STORAGE**

324 S. Second Ave., Phoenix, Arizona

**“PERSONALIZED SERVICE”**

DISTRIBUTION • STORAGE • DRAYAGE

SANTA FE &amp; SO. PAC. SIDINGS

**TUCSON, ARIZ.**

Telephone 2-3331

**TUCSON WAREHOUSE & TRANSFER CO.**

110 E. 6th St., Tucson, Ariz.

**Storage—Warehousing—Distribution—Packing**

59,000 sq. ft. in Tucson—Served by Rail-Motor Truck. Modern fleet of trucks from 1-60 Tons for distribution in Tucson and vicinity. Crane and Winch service for heavy lifts.

**LITTLE ROCK, ARK.**

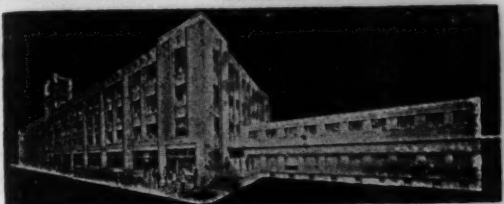
New one story 90,000 sq. ft. warehouse

**COMMERCIAL WAREHOUSE CO.**

This ultra modern warehouse property with six car siding on the Rock Island is completely mechanized. We offer general merchandise warehousing at its best, including pool car distribution, office and display facilities and loans on stored commodities.

300-324 RECTOR STREET

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304 E. MORGAN AVE.  
WASHINGTON 7-2347NEW YORK 11  
11 WEST 42ND ST.  
NEW YORK 36**LITTLE ROCK, ARK.**ARKANSAS LARGEST WAREHOUSE  
Merchandise and Household StorageFIREPROOF—CONSTRUCTED  
Pool Car Distribution—Agent, Allied Van Lines**TERMINAL WAREHOUSE CO.**Member American Warehousemen's Association  
American Chain of Warehouses

LITTLE ROCK

ARKANSAS

**LOS ANGELES, CAL.**Operating  
Warehouses  
Throughout  
the West**BEKINS**

Since 1893

**VAN AND STORAGE CO.**1335 SO. FIGUEROA  
W. C. Elliott, Manager**LOS ANGELES, CAL.**

MEMBER OF A.W.A.

**PACIFIC COAST TERMINAL  
WAREHOUSE COMPANY**

4802 LOMA VISTA AVE. LOS ANGELES 58

MERCHANDISE STORAGE AND DISTRIBUTION

Located in the heart of the Wholesale District

**LOS ANGELES, CAL.**

ESTABLISHED 1918

Phone: TR-8282

**PACIFIC COMMERCIAL WAREHOUSE, INC.**

923 E. 3rd St. Los Angeles 13, Cal.

GENERAL MERCHANDISE STORAGE

POOL CAR DISTRIBUTION

STORAGE IN TRANSIT

DAILY HARBOR, LOCAL AND STATEWIDE HAULING

EXPERIENCED, EFFICIENT, BONDED PERSONNEL

10 Car Siding on A.T.&amp;S.F. Railway

Sprinklered—A.D.T. Protected

**LOS ANGELES, CAL.****REPUBLIC VAN & STORAGE CO., INC.****WAREHOUSING—DISTRIBUTING—  
CARTAGE**

147,000 sq. ft. in downtown L. A., 9 car switch covered dock—small blocks of space for lease.

**COAST TO COAST VAN SERVICE**

214 No. Alameda

Export Packing &amp; Crating

Tucker 6101



LOS ANGELES, CAL.

1817-1855 INDUSTRIAL ST., LOS ANGELES 21

## Star Truck & Warehouse Co.

COMPLETE FACILITIES EFFICIENT SERVICE

Storage SPRINKLERED—A.D.T. Drayage

240,000 Square Feet 117 Pieces Motor Equipment

New York Represented by Distribution Service Chicago San Francisco

OAKLAND, CAL.

## GENERAL MERCHANDISE

WAREHOUSING • DISTRIBUTING • DRAYING

Steamer Piers • Office Space Available



## HOWARD TERMINAL

Established 1900

95 MARKET STREET • OAKLAND 4, CALIFORNIA

SAN FRANCISCO, CAL.

## HASLETT WAREHOUSE COMPANY

680 BEACH STREET, SAN FRANCISCO 9

Largest and most complete storage and trucking service on the Pacific Coast

Operating in San Francisco, Oakland, Stockton and Sacramento

Member: American Warehousemen's Assn. American Chain of Warehouses, Inc.

SAN FRANCISCO, CAL.

Sutter 1-3461

Member  
American Warehousemen's Association  
Distribution Service, Inc.

Complete  
Warehousing  
SERVICE



General Merchandise  
United States Customs and  
Internal Revenue Bonded Storage  
Draying and Pool Car Distribution  
Office Accommodations and Telephone Service

San Francisco Warehouse Company

605 Third Street  
SAN FRANCISCO 7

Colorado Springs, Colo.

SIERRA MADRE at LAS ANIMAS

## WEICKER TRANSFER & STORAGE CO.

- ★ Pool car distribution—
- ★ Moving, packing, shipping.
- ★ Crane, Winch, Heavy hauling equipment.

Agent ALLIED Van Lines



DENVER, COLO.

"BANK ON  
BANKERS"

A.D.T. Protection — C.O.D. — U.P.  
Also Warehouses at Brighton, Colo.  
Represented by  
Associated Warehousemen Inc.  
Chicago and New York

you can BANK ON

THE BANKERS WAREHOUSE COMPANY

Warehouses: 2133 and 2143 Blake St.  
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Something to ship,  
Something to store?  
BANKERS the warehouse  
that gives you all four...

1. Merchandise Storage
2. Pool Car Distribution
3. Private Siding
4. Fork Lift and Pallet Storage Exclusively

DENVER'S MOST MODERN  
"ONE FLOOR" WAREHOUSE  
4303 Brighton Blvd.

For Shippers' Convenience, States, Cities

## For WAREHOUSING & STORAGE in DENVER... Call LARSEN

Specializing in Pool Car Distribution and General  
Merchandise Storage—60,000 Sq. Ft. Sprinklered Space

- LOW INSURANCE RATE
- PRIVATE SIDING U. P.
- LOCAL DELIVERIES
- FREE SWITCHING

LARSEN TRANSFER & STORAGE CO.  
P.O. Box 5152 Terminal Annex Denver 17, Colorado

Now serving 2,500,000 people  
thru effective Spot Stocking



Line up with the Rocky Mountain's largest, finest warehousing service. North Denver assures superior service, soundly managed, financially responsible, staffed by experienced warehousemen. You get more for your money...with North Denver.

### CHECK THESE EXTRAS

- 225,000 ft. fire-resistant storage
- Low insurance rates (average 15½¢ on \$100)
- Railroad sidings for 30 cars
- Pool car distribution
- Covered truck-loading docks
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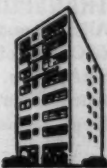
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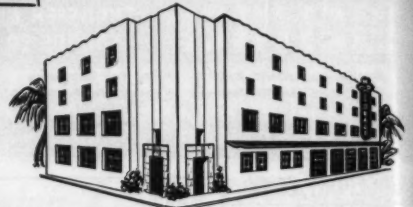
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## Atmospheric Influence . . .

(Continued from Page 21)

matic hot water boiler for winter use, and a refrigeration plant for summer use have to be made available for this dual-purpose installation.

For larger buildings split systems can be used, whereby tempered ventilation is controlled, often in addition to a controlled heating system. The use of zoned thermostatic control for a very large warehouse having different sections is essential where different rates of radiation from the outside walls of a building make a subdivision of heating circuits necessary.

### Factory Storage

Zoning of a building has to take the following factors into consideration: Outside temperature, wind velocity and direction, solar radiation, building construction details, hours and nature of occupancy. The first five factors determine heat losses, and are decisive for correct zoning.

Fig. 4 illustrates a two-story industrial building which is exposed on all sides, the long wall faces north and south. The lower floor is divided into three parts. The north half is used for heavy factory work, the southwest

quarter a storeroom and warehouse, while the southeast quarter comprises a garage and shipping platform.

The second floor provides space for offices in the north half, and facilities for light assembly in the south half. Zoning with regard to occupancy and use suggests the following: Garage and shipping platform and storage spaces are zones A and B; the heavy factory space on the ground floor is zone C; the office space on the upper floor is zone D; the light assembly shop is zone E; and the private offices should become zone F.



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It is, however, doubtful whether zoning will always go as far as shown in the above example. A medium-sized building might become sufficiently zoned if divided into a northeast and a southwest aspect zone. In some instances a third zone might be added for office accommodation, as distinct from actual factory space.

Radiant heating by means of embedded heating coils recommends itself for warehouses when newly built, but is sometimes difficult to install in existing buildings. Nevertheless, some existing buildings lend themselves to ceiling or wall coils as shown in Fig. 5.

### Humidity Control

All the above systems help control air temperature, but leave air humidity uncontrolled. Use of automatically controlled air conditioning systems is a solution which best solves the problem.

The usual elements used in central conditioning plants, or in packaged unit air conditioners are: Inlet air filter, pre-heater or re-cooler, air washer chamber, eliminator plate, re-heater, or re-cooler, fan, and air distribution system.

Important is the refrigeration plant for serving the pre-cooling and the re-cooling coils, and also for supplying chilled water for the pump supply to (Please Turn to Page 73)

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# Atmospheric Influence . . .

(Continued from Page 71)

the spray chamber, illustrated by Fig. 5.

Before dealing with controlled air conditioning, a few words on basic control theory are in order. A primary or detecting element senses the temperature, or humidity, and sends out small electric impulses to an electric controller. An electric or electronic relay magnifies the output from the control mechanism, and thus actuates a controlling device or regulating unit.

The latter can be a valve, an air damper, or regulating gear in general. All control actions and reactions occur in a circle or "closed loop," as shown, and it is important to note that the controlled process is an integral part of the control cycle.

Process time lags, i.e., retardations and delays between a movement of the controlling device and actual variation of temperature and humidity, leaves the process for smaller or longer periods uncontrolled. Large process lags are, therefore, unfavorable for close control.

A controllable air conditioning system must have small time lags. Time intervals between impulse from the primary control element and the actual control movement of the controlling device are called instrument time lags. The smaller the instrument time lag, the more sensitive and more responsive a control instrument will be. It must, however, be stable and accurate at the same time.

## Control Methods

There is no universal control method for air conditioning plants, and each control system has to be worked out individually after some form of process analysis.

A simple method of dew-point control is shown in Fig. 6. The plant consists of inlets for fresh and recirculated air, of inlet air filter F; heater or cooler, A; spray chamber B, followed by scrubber and eliminator plates C. D is a heater or cooler battery, and the motor driven fan blows the treated air into the distribution duct. The dew point temperature is controlled by means of thermostat 3 placed behind the eliminator plates C, serving a gradual control valve in the steam supply to preheater A, or in coolant supply to a pre-cooler.

Thus the temperature of air saturated in the spray chamber has been controlled. In some layouts also a 3-way mixing valve is controlled from thermostat 3 mixing the returning water from the sprays and a supply of cooling water.

The final air temperature is controlled by thermostat 4 immersed in

air duct E, actuating control valve 2 in the supply pipe to re-heater, or re-cooler, as the case may be. Thus the "dry bulb" temperature of the treated air is achieved by simple means. In some instances a hygrostat is used for humidity control of the outgoing air.

## Automatic Control

A control system consists basically of the control instruments, the auxiliary plant (for example, an air compressor for operation of pneumatic regulators), a pump for operation of water or oil-operated instruments, or electric gear for electrically operated controllers.

The necessary air piping, or the electrical wiring system is also part of a control system. Whether simple or complex, a proper choice of instruments, the use of an adequate number, and their correct installation and adjustment will be the criterion for good control.

The best means to modernize a warehouse by providing controlled air conditions all the year round are packaged types of modern unit air conditioners as shown in Fig. 7. They can be fitted anywhere in the building, similar to unit heaters or coolers.

Fig. 8 illustrates a vertical floor type having the following elements: An air filter for cleaning the incoming air; a fan for air movement; a cooling coil for cooling and drying the air; a heating coil for heating; sometimes spray water nozzles for humidifying the air, and a thermo-humidistat for automatically controlling admission of the cooling medium (refrigerant)



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and/or heating medium (steam or hot water) to the apparatus. Dehumidifying or drying of the air is performed by cooling the air below its dewpoint by means of refrigerant coils.

Moisture from the air falls out in droplets at lowered air temperatures. This physical fact is used in a unit air conditioner to extract moisture from the treated air. The latter is then immediately heated again to obtain the desired outlet temperature and humidity.

By choosing the cooling down temperature in accordance with desired relative humidity and outlet air temperature, and by controlling both cooling and reheating, dewpoint control can be achieved automatically by means of a humidistat, called a dry-and-wet bulb thermometer. The notable point is that humidity content of the air is controllable from two temperatures, namely dewpoint and temperature of reheating.

## Larger Conditioners

A horizontal type of unit air conditioner is shown in outside view and diagrammatically in Fig. 9. The sketch illustrates all the elements as mentioned before, but they are arranged horizontally. Large central air conditioning plants can also be used for larger storage rooms to provide desired temperature and humidity conditions, and they work on similar lines to the smaller units. Fig. 10 shows a central air conditioning plant, consisting of air filter, air preheater, air washer chamber, reheater and fan, with an air duct system for distribution of the treated air throughout the storeroom.

The purpose of the air-washer, consisting of banks of spray water nozzles, a circulation pump and baffle plates for eliminating droplets from the outgoing washed air, is not only a cleaning action, but also humidifying or drying of the treated air.

The drying or dehumidifying effected is achieved again similarly to the previously mentioned refrigerant coils.

For medium-sized or small storerooms, the packaged air conditioning units are a convenient means for achieving desirable storing conditions. Where controlled background heating already exists for larger stores, for example, radiators or heating coils, an additional unit air conditioner can under favorable circumstances take over supply of peak loads, and also improve humidity conditions by blowing in dry hot air when required.

The worst enemy of warehouse buildings is a problem as difficult as it is common in certain climates. If condensation troubles occur inside a building, it must be properly insulated, heated and ventilated by one of the methods previously described.\*

(Resume Reading on Page 22)



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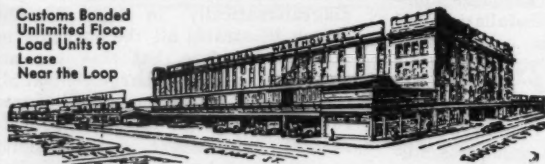
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323 West Polk Street

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EAST ST. LOUIS, ILL.

Telephone: Bridge 3723

## MERCHANDISE WAREHOUSING

For The Carload Shipper

360,000 Sq. Ft. on One Floor

50 Car Private Siding on TRRA.

Storage In Transit Privileges

A.D.T. Burglar & Sprinkler Alarms

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**G. J. NOONEY & CO.**

(MISSISSIPPI AVENUE WAREHOUSE)

EAST ST. LOUIS, P. O. BOX 26, ILL.



JOLIET, ILL.

Telephones 4381 and 4382

**Joliet Warehouse and Transfer Company**  
Joliet, Illinois

**MERCHANDISE STORAGE AND DISTRIBUTION**

Best distributing point in Middle West

Located on five Trunk Lines and Outer

Belt which connects with every road enter-

ing Chicago. No switching charges.

Chicago Freight Rates Apply



JOLIET, ILL.

## TRANSIT WAREHOUSE AND DISTRIBUTING CO.

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Phone—Joliet 5276

Merchandise Storage and Distribution

*The only completely Palletized Warehouse in Joliet*

Pool Car Distribution • Motor Freight Service  
Located on Rock Island R. R. • Free Switching

JOLIET, ILL.

## WILL COUNTY WAREHOUSE COMPANY

formerly Joliet Mfg. Co., which was Established 1848

150 Youngs Ave., Joliet, Ill.

Offers 50,000 Sq. Ft. of modern warehouse space, located on the CRI and PRR Roads. Private siding and free switching. General Merchandise storage.

*Automatically Sprinklered Throughout*



PEKIN, ILL.

Location—10 miles from Peoria, Ill.; 165 miles from Chicago, Ill., or St. Louis, Mo.

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278 Koch St., Pekin, Illinois

Merchandise & Household Goods Storage—Moving & Crating

150,000 Sq. Ft. • One Floor • Brick Construction • Sprinklered

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11 Trucks • Free Switching by: CCC&St.L. •

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Storage in Transit

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The most modern, bonded, fireproof storage warehouse in the entire Rockford area.

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Experienced Personnel — Prompt Service

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RAILWAY—HIGHWAY MEET

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100,000 sq. ft. brick, steel and concrete warehouse, all on 1 floor. No floor load limit. Rail siding for 14 car spotings at 650' docks under canopy to 8 warehouse entrances. 20 doors to 250' truck docks, under canopy. 2000 to 10,000 lb. capacity fork lift trucks, palletized. Sprinklers, Autocall Waterflow Alarm, ADT watch service, manual fire alarm service. Insurance 11.4¢ per \$100 valuation per annum.

Serving Indiana, Illinois, Kentucky and adjacent areas  
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11 WEST 42ND ST.  
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Telephone Anthony 3222

## FORT WAYNE STORAGE COMPANY, INC.

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FIREPROOF AND NON-FIREPROOF BUILDINGS  
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Private Sidings—Pool Car Distribution

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## Merchandise and Cold Storage

Modern Fireproof Warehouses — Centrally Located — P.R.R. Siding — Lowest Insurance Rates — Pool Car Distributors — Local Cartage Service—Branch Office Service.

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Warehouse Receipts on Staple Commodities

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250 Park Avenue 53 W. Jackson Blvd.

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Sprinklered Warehouses Office Rooms

General Merchandise and Cold Storage

Down Town Location with RR tracks in building

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## Indianapolis Warehouse and Storage Co.

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Merchandise Storage • Private Sidings, N.Y.C.

Pool Car Distribution • Office Space

Represented By

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## MERCHANDISE STORAGE & POOL CAR DISTRIBUTION STORAGE-IN-TRANSIT

3 Locations, Anderson, Indianapolis, Kokomo

Consign NYC—Anderson & Indianapolis, Indiana

Consign NKP—Kokomo, Indiana

Lease space—Office space



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Telephone—PLaza 1304

### INDIANAPOLIS, IND.

Plaza 5513

A Complete Service

## STROHM WAREHOUSE AND CARTAGE COMPANY

359 W. RAY STREET, INDIANAPOLIS

OPERATING 53 TRUCK UNITS

General Merchandise—Pool Car Distribution

Modern Motor Trucking Service

Check Out Service

All Merchandise On Check Out Cars Placed

On Platform Ready For Delivery

Reciprocal Switching, All Railroads

Store Door Delivery and Pick-up for

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**General Merchandise Warehousing and Distribution.****Cold Storage.**Modern Brick Warehouse, Sprinklered 88,000 Square Feet.  
Siding on C. M. St. P. & P. Rd., Free Switching from Other  
Roads. Motor Freight Terminal.  
Member of A.W.A.—N.F.W.A.—Agents United Van Lines, Inc.**DAVENPORT, IOWA***New Warehouse**and Distribution Center*

Easily accessible! 100% palletized!

**ROEDERER TRANSFER  
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**DUBUQUE, IOWA****COMPLETE  
DISTRIBUTION SERVICES**222,000 sq. ft. of floor space in buildings of brick-concrete-  
steel construction. Chicago-Great Western R. R. siding with  
10 car capacity. Free switching with Federal Barge Lines.  
Low insurance rates. Complete-Motor-Freight-Facilities.  
Pool car distribution—all kinds. Merchandise & House-  
hold Goods Storage, industrial and office space for rent.*Write today***DUBUQUE STORAGE & TRANSFER CO.**

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Member of Iowa Warehouse Ass'n.

Chicago Representatives: Associated Warehouses, Inc.  
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Member NATIONAL FURNITURE WAREHOUSEMEN'S ASSN.

Agent ALLIED VAN LINES INC.

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- Complete Merchandise Storage Service
- 400,000 Square Feet Modern Sprinklered Bldgs.
- Extensive Rail and Truck Facilities

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Kansas Ave. &amp; Railroad St., Thatcher 5353—Kansas City, Kansas

**KANSAS CITY, KANSAS**

FOR OVER A QUARTER CENTURY

Household goods  
and merchandise storage.

PACKING, MOVING, SHIPPING—PRIVATE SIDING

Agent Member—Allied Van Lines

15TH AND MINNESOTA AVENUE

**WICHITA, KANSAS****A Modern Distribution and  
Warehouse Service  
Brokers Office & Warehouse Co.**

149 North Rock Island Ave., Wichita 2

B. W. BILLINGSLEY, JR., Manager

Member of American Chain of Warehouses

**WICHITA, KANSAS****MERCHANTS Van & Storage Company**

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Household Goods & Merchandise  
Storage. Free Switching—Sprinkler  
System

Member of NFWA—AVL

*For Shippers' Convenience, States, Cities***LOUISVILLE, KY.****DIXIE WAREHOUSE COMPANY**

1031 W. Main St., Louisville 2, Ky.

Member of

Two large sprinklered warehouses on private  
sidings served by I. C. and L. & N. Railroads  
with reciprocal switching. Complete local cart-  
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24 WAREHOUSES

OVER 900,000 SQUARE FEET

Merchandise, Household Goods, Dist. Spirits and  
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N.F.W.A.—Agent, Allied Van Lines, Inc.**LOUISVILLE, KY.****Ninth Street Public Warehouse Company, Inc.**

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Tel. WA 5154

Centrally located for all Manufacturers and  
Wholesale Groceries. IC RR siding.

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DISTRIBUTION

**LOUISVILLE, KY.****PORT of LOUISVILLE TERMINAL, Inc.**

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Louisville, Ky.

Modern river-rail-truck facilities for handling and  
warehousing freight. Sprinklered. 180,000 sq. ft.

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A. F. SCHNAUDER, Treas.**COMMERCIAL TERMINAL  
WAREHOUSE COMPANY**

INCORPORATED

Established 1910

A dependable agency for the  
storage and distribution of  
merchandise and manufactured  
products.

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NEW ORLEANS, LOUISIANA

Member of



New York—Chicago

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TELEPHONE—CANAL 1661

**HAYES DRAYAGE & STORAGE, INC.**

833 So. Front Street — New Orleans, La.

Public bonded warehousemen — drayage (pick-up  
and delivery) — Labeling and distributing — im-  
porters and exporters — pool car distributors —  
season warehousing, compressing and weighing.



and Firms are Arranged Alphabetically

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**TWO SHIPSIDE LOCATIONS TO BETTER SERVE  
USERS OF THE PORT OF NEW ORLEANS**

Established 1931 . . . Public, State and U. S. Customs Bonded  
space . . . Cotton compression and storage . . . Reciprocal  
switching . . . Low insurance rates . . . Foreign Trade Zone No 2  
space . . . Storage-in-transit privileges . . . A complete, reliable  
warehousing service, including drayage.

Represented by DISTRIBUTION SERVICE, INC.  
New York, Chicago, San Francisco  
Member: American Warehousemen's Association

## GULF SHIPSIDE STORAGE CORPORATION

Formerly DOUGLAS SHIPSIDE STORAGE CORPORATION

TERMINAL SERVED BY SAINT MAURICE AVENUE WHARF

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New Orleans Merchandise Warehousemen's Ass'n

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An Able servant to the PORT OF NEW ORLEANS  
Complete warehousing facilities—Distribution—Weighing—  
Forwarding—Fumigating—Storage—Cartage—Field Ware-  
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UNITED STATES AND STATE BONDED



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MERCHANDISE STORAGE—POOL CAR DISTRIBUTION

Located in the Heart of the Wholesale District • Conven-  
ient to Rail & Truck Depots • Private Switch Tracks T &  
NO-SP RR • Reciprocal Switching  
COMPLETE WAREHOUSING SERVICE



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Established 1875 Incorporated 1918

General Storage and Distributing

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## Complete Warehousing Services



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- Modern, protected facilities
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C. M. Wrightson, Mgr. & Treas.

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Rm. 301, Camden Sta., Baltimore 1  
Operating Terminal Warehouses on Tracks of  
The Baltimore & Ohio Railroad Co.

A. D. T. Private Watchman, Sprinkler  
Storage—Distribution—Forwarding  
Tobacco Inspection and Export—Low Insurance Rates  
Consign Via Baltimore & Ohio Railroad

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## J. NORMAN GEIPE VAN LINES, INC.

524-536 W. Lafayette Ave., Baltimore 17, Md.

See our advertisement on page 220—

1953 Directory Issue

## BOSTON, MASS.

Owned and Operated by Merchants Warehouse Co.

## CHARLES RIVER STORES

131 BEVERLY STREET—BOSTON 14, MASS.



Facilities, 250,000 square feet. Private siding Boston  
& Maine Railroad. Reciprocal switching, other rail-  
roads. Truck platform. U. S. Internal Revenue  
and Customs Bonded. General merchandise storage.  
Pool car distribution. Located on Boston's new  
Arterial Highway. Member A.W.A. and N.W.A.  
Represented by Allied Distribution, Inc.

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## FITZ WAREHOUSE CORPORATION

operating

ALBANY TERMINAL STORES

137 Kneeland Street, Boston 11

GENERAL MERCHANDISE STORAGE

B. & A. R.R. Delivery

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## STORAGE

Wool, Cotton and General Merchandise  
INDUSTRIAL SPACE FOR LEASE  
IN UNITS TO SUIT TENANTS



LOCATION: Near but outside congested part of city. Ob-  
viates costly trucking delays. Overland express call.

STORAGE: For all kinds of raw materials and manufac-  
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RAILROAD CONNECTIONS: Boston & Maine E. E. sid-  
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DISTRIBUTION: Complete service for manufacturers dis-  
tribution whether from storage or pool cars. Trucking  
to all points in Metropolitan District.

LEASING: Space in units of 2,000 to 40,000 ft. on one  
floor for manufacturing or stock rooms at reasonable  
rentals on short or long term leases.

DEEP WATER PIERS: Excellent piers for cargoes of  
lumber and merchandise to be landed and stored in  
connecting warehouses.

## WIGGIN TERMINALS, INC.

Boston 29, Mass.

Tel. Charlestown 0880



Member AMERICAN WAREHOUSEMEN'S ASSOCIATION

## BOSTON, MASS.

**Hoosac Storage & Warehouse Company**  
Lechmere Square, East Cambridge 41, Boston  
**FREE AND BONDED STORAGE**  
A.D.T. Automatic Fire Alarm  
Direct Truck Connection B. & M. R. R.  
Lechmere Warehouse, East Cambridge, Mass.  
Hoosac Stores, Hoosac Docks, Charlestown, Mass.  
Warren Bridge Warehouse, Charlestown, Mass.

## To Those Who Need **WAREHOUSING** In New England:

Lawrence is but 26 miles from Boston—12 miles from Lowell—handy to Maine and New Hampshire points. B & M R.R. Siding—and good truck roads in all directions—low trucking rates.

Safe, clean storage for all types of merchandise and commodities except frozen—a well-established Bonded Warehouse—sprinklered throughout—completely owner-supervised—low insurance—two modern high-speed elevators. Write or phone us. Rates will interest you.



### BARRETT WAREHOUSE

One Broadway, Lawrence, Massachusetts Telephone 3-7821

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Member of A.W.A.—M.W.A.

### ATLANTIC STATES WAREHOUSE AND COLD STORAGE CORPORATION

385 LIBERTY ST., SPRINGFIELD 1

General Merchandise and Household Goods Storage. Cold Storage for Butter, Eggs, Poultry, Cheese, Meats and Citrus Fruits  
B. & A. Sidings, and N. Y., N. H. & H. R. R. and B. & M. R. R.  
Daily Trucking Service to suburbs and towns within a radius of fifty miles.

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**HARTFORD DESPATCH  
and WAREHOUSE CO. inc.**  
214 Birnie Ave., Springfield, Mass.

U. S. Customs Bonded Warehouses—Terminals • Daily Distribution in Conn. and Mass.  
Private Sidings • Pool Distribution • Members: AD, Inc. ACW—AWA

## SPRINGFIELD, MASS.

### NELSON'S EXPRESS & WAREHOUSE CO., INC.

Merchandise Storage—Pool Car Distribution  
Private siding on N.Y.N.H.&H.R.R.

Bonded Warehouse Sprinkler System  
93 Broad St.  
Springfield, Mass. Telephone  
6-8334—6-8335

For Shippers' Convenience, States, Cities

## SPRINGFIELD, MASS.

General Cold Storage

### Pioneer Valley Refrigerated Warehouse, Inc.

P. O. Box 155

Brightwood Station

Whee. steel & concrete, automatic fire & burglar alarms—ADT. TS Area 1,908,000 cu. ft. FI Ld 350 lbs. CI Ht 8-10 ft. Elev cap 8,000 lbs. Priv siding 30-car cap on. & consign shipments via B&M; sta. Brightwood; free switching. 100% palletized. Temp. range—10° to 40°. Humidity control. 15-th. dock. Specialize in frozen foods. Open yard stps. Br. office facilities. Loans on stored commodities. Printed tariff. Member of the A. W. A. (Cold Storage Div.)

## SPRINGFIELD, MASS.



### J. J. SULLIVAN THE MOVER, INC.

Fireproof Storage

Offices: 385 LIBERTY ST., SPRINGFIELD 1  
HOUSEHOLD GOODS STORAGE, Packing,  
Shipping, Pool Car Distribution of All Kinds  
Fleet of Motor Trucks

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R. N. Sergeant, Pres.

### EMMERSON

Truck and Storage Co., Inc.

121 E. STATE ST. PH 2-5139—TELETYPE BCK 93

Serving this community for over Half Century

### GENERAL STORAGE

Merchandise and Household Goods  
Local and Long Distance Moving  
Heavy Machinery Moving & Erection  
State and Interstate

Pool Car Distribution—NYC Cartage Agents  
60,000 Sq. Ft. Fireproof Construction  
3 Car NYC Siding. Covered Truck Loading Docks  
Low Insurance Rate

Packing—Crating—Forwarding

Members: NFWA—LCNC—MichFWA  
Agents: Allied Van Lines

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### CENTRAL DETROIT WAREHOUSE

Located in the heart of the wholesale and jobbing district, within a half-mile of all freight terminals. Modern buildings, lowest insurance rate in city.

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Wyoming and Brandt Avenues

Modern concrete buildings, fully sprinklered, serving the west side of Detroit and the city of Dearborn. Specializing in heavy and light package merchandise and liquid commodities in bulk. Connected directly with every railroad entering the city.

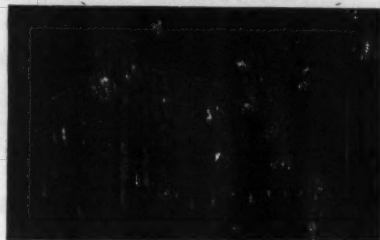
### Central Detroit Warehouse Co.

Fort and Tenth Streets, Detroit 16, Mich.

## AMERICAN WAREHOUSEMEN'S ASSOCIATION

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★ This modern building offers dry storage, also Michigan's largest, most complete and efficient refrigerated storage, with ice manufacturing plant, and blast quick freezing facilities at 40° below zero. Every warehousing facility is available. Desirable office space. Car icing. Financing. Adequate receiving and distributing facilities. In-transit storage. Absolute protection. Minimum insurance. Modern palletized equipment. Sharp - freezing rooms. Free reciprocal switching — all railroads. Continent wide connections.



W. J. LAMPING, GEN. MGR.

**GRAND TRUNK WAREHOUSE  
and  
COLD STORAGE COMPANY**

1921 E. FERRY AVE., DETROIT 11, MICH.  
G. T. RWY. SIDING

WALNUT  
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DETROIT, MICH.

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*In Greater*  
**DETROIT**  
*the Best is*  
★ **U.S.** ★

**UNITED STATES COLD STORAGE CORP.**

1448 WABASH AVENUE, DETROIT 16  
Phone: Woodward 2-4730



U. S. COLD STORAGE CORP.



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DECEMBER, 1953

DETROIT, MICH.

*Facing the Busiest*  
*Thoroughfare in* **DETROIT**

290,000 square feet, Centrally located. Private siding facilities for 20 cars with free switching from all railroads. Large, enclosed loading dock. Our own fleet of trucks make prompt reshipment and city deliveries.

**JEFFERSON TERMINAL WAREHOUSE**

1900 E. Jefferson Ave.

DETROIT 7, MICHIGAN

GRAND RAPIDS, MICH.

THE LARGEST COMPLETE WAREHOUSING AND DISTRIBUTING SERVICE IN GRAND RAPIDS  
**COLUMBIAN STORAGE & TRANSFER CO.**



Approximately 90% of All Commercial Storage and Pool Cars in Grand Rapids Handled Thru Columbian

Member of  
A.W.A.

CHICAGO 4  
100 N. MICHIGAN AVE.  
WALNUT 1-2887

ALLIED DISTRIBUTION INC.

NEW YORK 10  
15 WEST 42ND ST.  
PL 6-8881

LANSING, MICHIGAN

Since 1919

**FIREPROOF STORAGE CO.**

728 East Shiawassee

2 — WAREHOUSES — PALLETIZED

PRIVATE N.Y.C. SIDING • DISTRIBUTION  
TRUCKING • WINCH • VAN SERVICE  
MERCHANDISE AND HOUSEHOLD GOODS



LANSING, MICH.

Agents for Allied Van Lines, Inc.

**LANSING STORAGE COMPANY**



The only modern warehouse of fireproof construction in Lansing.

**MOTHPROOF FUR AND RUG VAULTS**

Local and Long Distance Moving  
"WE KNOW HOW"

440 No. Washington Ave., Lansing 30, Phone: 9-7568



SAGINAW, MICH.

**BRANCH HOUSE SERVICE**

... AT WAREHOUSE COST

• It is possible here to secure the same high-grade service you would expect in your own branch warehouse, but at less expense and without worry or trouble.

• Saginaw is a distribution point for Northeastern Michigan. Every merchandise warehouse facility is available at Central-Warehouse Co.

• Merchandise storage, cartage, pool car distribution, daily direct service to all points within 75 miles by responsible carriers.

**CENTRAL WAREHOUSE CO.**

1840 No. Michigan Avenue

SAGINAW, MICHIGAN



Member **AMERICAN WAREHOUSEMEN'S ASSOCIATION**

MINNEAPOLIS, MINN.

ASSOCIATED WAREHOUSES, INC.  
AMERICAN WAREHOUSEMEN'S ASSOCIATION

**MINNEAPOLIS TERMINAL WAREHOUSE Co.**

OPERATED JOINTLY WITH  
ST. PAUL TERMINAL WAREHOUSE CO. MIDWAY TERMINAL WAREHOUSE CO.

ALL MERCHANDISE WAREHOUSING SERVICES  
CONVENIENT FOR ALL TWIN CITY LOCATIONS



MINNEAPOLIS, MINN.

Established 1883

### SECURITY WAREHOUSE COMPANY

GENERAL OFFICE: 334 NORTH FIRST ST.  
MINNEAPOLIS 1, MINNESOTA  
PHONE ATLANTIC 1281



*Merchandise Storage  
Pool Car Distribution, Local Trucking  
Industrial Trackage Space*

ST. PAUL, MINN.

### A COMPLETE WAREHOUSING SERVICE

Merchandise Storage—Cold Storage  
Pool Car Distribution—Industrial Facilities

Situated in the Midway, the center of the Twin City Metropolitan area, the logical warehouse from which the Twin Cities and the Great Northwest can be served from one stock, with utmost speed and economy. No telephone toll charge to either city.

### CENTRAL WAREHOUSE COMPANY

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Phone: Mastor 2831  
Represented by DISTRIBUTION SERVICE, INC.  
257 E. Grand St. CHICAGO 11  
2 Broadway NEW YORK CITY 4  
605 Third St. SAN FRANCISCO 7  
Phone: Superior 7-7180 Phone: 507 Main 1-3461  
300 Irving Green 9-8986



AMERICAN WAREHOUSEMEN'S ASSOCIATION

JOPLIN, MO.

### Sunflower Transfer & Storage Co.

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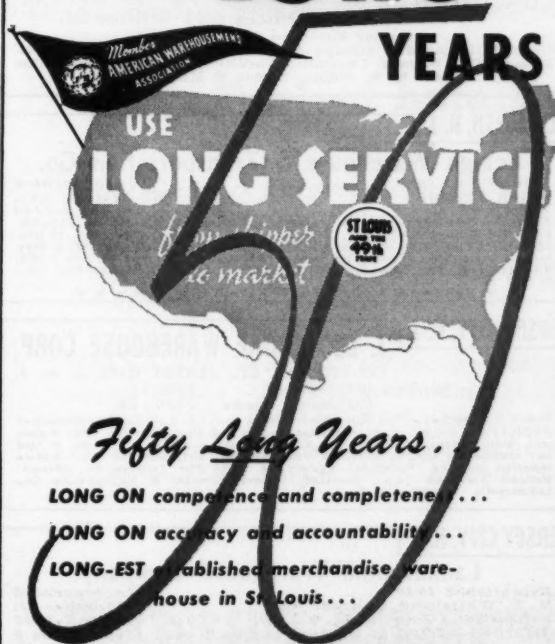
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## Within the Law

(Continued from Page 65)

merchandise by rules and regulations in a tariff schedule filed with the ICC?"

According to a late higher court decision, the answer is no.

For example, in *H— Freight Lines v. H—*, 257 S. W. (2d) 60, the testimony showed facts, as follows: The freight line had filed its tariff schedules with the ICC. The regulations and rule provide that the sole responsibility of unloading freight transported by the carrier is with the consignee.

One day the freight line, a common carrier of interstate freight, transported to one *H—* a boiler. Upon its arrival *H—* procured the aid of his son to assist in the unloading. The driver of the truck was standing in the truck, using a crowbar. He continued to prize the boiler with his crowbar, thus causing it to fall. As a result of the fall, the boiler was damaged and *H—* received serious injuries. A suit was filed against the freight line.

During the trial the counsel for the *H—* Freight Lines argued that it could not be liable for damage to the boiler, or injuries to *H—*, be-

cause the tariff schedule filed with the ICC clearly made the consignee responsible for unloading the boiler. Notwithstanding this argument the higher court indicated that the carrier is liable for damages to the boiler, and for injuries to *H—*. The court said:

"Although there was considerable dispute as to who was actually directing the unloading operations, we do



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not consider that point as controlling. Even if the operation was being directed by *H—* there is ample evidence from which the jury could have found that the falling of the boiler was brought about entirely by appellant's truck driver in prizing it off the truck with his crowbar after all movement was stopped.

Regardless of where the regulation placed responsibility for the unloading, the truck driver was assisting in the removal of the boiler. His remuneration for such services was payable entirely by *H—* Freight Lines. We, therefore are constrained to the view that the driver in assisting in unloading the boiler was doing so as the employee of *H—* Freight Lines, notwithstanding the provisions of the regulation involved."

For comparison see *R— v. N— Co.*, 269 N. Y. 219. Here a carrier maintained a crane and operator for the use of its shippers and an accident occurred while unloading was being performed by crane and operator.

Although the rules in the tariff schedule provided that only the consignee could be responsible for damage liability during unloading of the freight, the higher court held the carrier liable. This court said:

"The fact is undisputed that the respondent (carrier's crane was being (Please Turn to Page 94)

and Firms are Arranged Alphabetically

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 Office & Warehouse: 107-121 Brookfield St.  
 Household Goods Moving, Storage, Packing, Shipping. Prompt service for any point in Westchester County.  
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 Storage, Distribution and Freight Forwarding From an Ultra-Modern Free and Bonded Warehouse  
**IDEALLY LOCATED**  
 IN THE VERY CENTER OF NEW YORK CITY  
 Adjacent to All Piers, Jobbing Centers and The Holland and Lincoln Tunnels  
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 Office and Warehouse, 926 Tuckaseegee Road  
 MERCHANDISE STORAGE ONLY. POOL CARS DISTRIBUTED  
 MOTOR TRUCK SERVICE LOCAL AND DISTANCE  
 PRIVATE RAILROAD SIDING, SPRINKLERED

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 U. S. CUSTOMS BONDED & FREE  
 Household & Commercial Storage  
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 Export Packers—Pool Car Distribution  
 Affiliated with North American Van Lines  
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 Sprinklered Warehouse  
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 100% Palletized  
 9-Car Private Siding  
 Consign via Southern Railway  
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#### MERCHANDISE STORAGE POOL CAR DISTRIBUTION

**Private Siding** **Trucking Service**  
Members A. W. A. American Chain of Warehouses

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**RALEIGH BONDED WAREHOUSE, INC.**  
Wake Forest Road Raleigh, North Carolina  
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N.S.R.R.

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General Storage—Cold Storage—Household Goods  
Established 1904

Three warehouse units, total area 161,500 sq. ft.; of this 29,320 sq. ft. devoted to cold storage. Two buildings sprinkler equipped. Low insurance rates. Spot stocks, pool car distribution. Complete warehouse services. Fargo serves North Dakota and Northwestern Minnesota.

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### CANTON STORAGE, Inc.

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Pool cars distributed. Private sidings.  
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A.W.A.—O.F.A.A.—O.W.A.



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COMPLETE WAREHOUSING SERVICE

Merchandise Storage — Pool Car Distribution  
LOCAL DELIVERY

PRIVATE SIDING NYC RAILROAD

684 LEADER BLDG.

CLEVELAND 14, OHIO

## CLEVELAND, OHIO

A. W. A.

A. C. W.

1886 BROADWAY  
N. Y. C. Orange Avenue  
Freight Terminal  
CHerry 1-8873  
Established 1899



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**WATER, RAIL and  
TRUCK FACILITIES**

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TERMINALS**

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Eastern Representative: J. Lee Cooke Warehouse Corporation, New York phone: WH. 3-3990

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The **OTIS TERMINAL WAREHOUSE**  
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Downtown location; Modern and fireproof; Low insurance rates;  
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Main Office—1197 West 67th Street Tel.—Atlantic 17040  
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Insurance 30¢; ADT Burglary; Tested, reinforced mill constr.; 5 Truck docks;  
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SERVICE FEATURES—100,000 sq. ft. of dry storage space . . . Three other  
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for winter stge.

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Cleveland's Most Modern Warehouse

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Complete Merchandise Storage and Pool Car Service.  
Mechanical Handling and Pallet System

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WA bank 2-3047

NEW YORK 18  
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Complete service for  
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—Central Location in jobbing district—Private  
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**HEmlock 1268**

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75,000 sq. ft. brick and steel  
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600—COLD  
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## MERCHANTS AND MANUFACTURERS WAREHOUSE CO.

Office and Main Warehouse: 15-29 So. Ontario St., Toledo 3  
CENTER OF JOBBING DISTRICT  
Sprinklered Buildings—100,000 square feet Dry Storage—70,000  
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Free Switching. Merchandise Storage—Pool Car Distribution  
—Negotiable Receipts—Transit Storage Privileges—Low In-  
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# TOLEDO, OHIO

For Shippers' Convenience, States, Cities



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TOLEDO, O.



**MERCHANDISE WAREHOUSING  
POOL CAR DISTRIBUTION  
and INTRANSIT STORAGE**

Represented by  
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ALLIED DISTRIBUTION INC. NEW YORK 36 81 WEST 114TH ST. PL 4-4893

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## TOLEDO TERMINAL WAREHOUSE, INC.

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Merchandise storage • Pool car distribution •  
Fireproof • Private siding Nickel Plate Road •  
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storage arrangements • Motor truck service •  
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Private Sidings  
Erie and P.&L.E.

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HAVE SOMETHING IN STORE for you . . .  
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## Commercial Warehouse Co.

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Exclusive Merchandise Storage  
Pool Car Distributors  
Free Switching 14c. Insurance rate

# OKLAHOMA CITY, OKLA.

Established 1889

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GENERAL WAREHOUSING AND DISTRIBUTION

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## JOE HODGES FOR MERCHANDISE . . .

**MOVING  
PACKING  
STORAGE**

Oklahoma's largest warehouse, modern, fireproof  
and sprinkler equipped. 106,500 square feet,  
available for all kinds of storage. Entire floor,  
35,500 square feet, devoted to Merchandise. 315  
private rooms. Lowest insurance rate in Tulsa.  
Heavy hauling, cross country or local. Big vans,  
deeply padded. Overnight Express Service be-  
tween Tulsa and Oklahoma City. At freight rates!  
Mixed cars a specialty. Private siding on Santa  
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entering Tulsa:

MEMBERS: A.V.L.—N.F.W.A.—A.W.A.—A.C.W.—S.W.A.

**FIREPROOF WAREHOUSES  
Tulsa Oklahoma**



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### NEWEST WAREHOUSE IN PORTLAND

- Modern, all concrete
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- ADT protection

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for efficient DISTRIBUTION  
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728-40 North 15th Street  
Complete Merchandise Storage and  
Pool Car Distribution  
Household Goods Storage  
Truck Service—P.U.C. and I.C.C. Certificates  
Private Railroad Siding—L.V.R.R.

For more product information use the

READERS' SERVICE CARD

on Page 34 to check your selections

## BUTLER, PA.

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Est. 1902

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Merchandise and Household Goods

Pool Car Distribution Packing and Crating  
3 Car Siding Free Switching  
2 Warehouses 41,000 sq. ft.

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MEMBER



### ERIE WAREHOUSE CO.

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DOORS ACCOMMODATE RAILROAD CARS, TRUCKS

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INC. 1902

### HARRISBURG STORAGE CO.

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DISTRIBUTION SERVICE  
STORAGE IN TRANSIT

PENNSYLVANIA RAILROAD SIDING  
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## HARRISBURG, PA.

### HARRISBURG WAREHOUSE CO.

GENERAL MERCHANDISE STORAGE  
POOL CARS DISTRIBUTED  
BRICK BUILDING—LOW INSURANCE  
STORE DOOR DELIVERY ARRANGED FOR  
PENNA. R. R. SIDING  
OPERATING KEYSTONE WAREHOUSE

## LANCASTER, PA.

INC. 1906

### LANCASTER STORAGE CO. LANCASTER, PA.

Merchandise Storage, Household Goods, Transferring,  
Forwarding  
Manufacturers' Distributors, Railroad Distribution,  
Local and Long Distance Moving  
Member of May.W.A.—PFWA—PMTA

## PHILADELPHIA, PA.

Member of A.W.A.—P.W.A.

### Commercial Warehousing Co.

Meadow and Wolf Sts.

Philadelphia 48

Complete Warehousing Service for Storage and Distribu-  
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Private Siding B. & O. • Pool Car Distribution  
Low Insurance Rates

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Established 1862

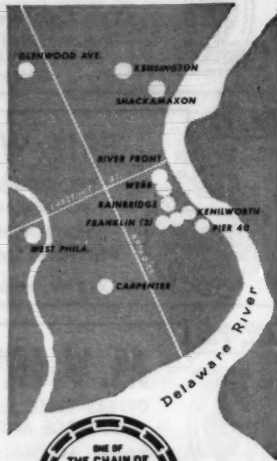
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Merchandise Storage Storage in Transit  
Direct Sidings—Penna. R.R. and Reading R.R.  
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Represented by Associated Warehouses, Inc.  
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For efficient, economical distribution in the Philadelphia area, choose from among the 22 big, modern "Pennsylvania" warehouses. Here are over 1,000,000 square feet of desirable free and bonded storage space.

Painstaking personnel, using specialized equipment, handle even difficult commodities with speed and safety. Here are superb rail and highway facilities—one- to 10-ton trucks for prompt store-door deliveries. Low insurance rates. Write for full details about money-saving "Pennsylvania" service and storage of goods in any quantities.

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**PENNSYLVANIA**  
WAREHOUSING & SAFE DEPOSIT COMPANY  
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Behind this one name are: 13 modern warehouses; 3,000,000 sq. ft. of storage space; U.S. Customs bonded space; efficient storing and moving of household goods; fast handling of bulk or packaged goods; direct connections with the Pennsylvania and Reading Railroads; low switching rates to and from Delaware River piers; pool-car service; storage-in-transit; facilities for receiving shipments by truck; mechanized handling equipment; fast store-door delivery by our own truck fleet. Write for further information.

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CHICAGO 11: 251 E. Grand Ave., Superior 7180

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Storage, Packing and Shipping

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Agent of Allied Van Lines, Inc.

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Thomas White Owner and Manager

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**In the heart of Pittsburgh's  
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STORAGE IN TRANSIT • B. & O. SIDING  
COMPLETE TRUCKING FACILITIES  
A.D.T. PROTECTION

**WHITE** Terminal Company  
2525 Railroad Street

Also Operators of  
WHITE MOTOR EXPRESS CO.  
Established 1918

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AND POST STORAGE, INC.**

LOCAL & LONG DISTANCE MOVING  
MANUFACTURERS' DISTRIBUTORS  
HEAVY HAULING & RIGGING  
HOUSEHOLD GOODS STORAGE  
PACKING, CRATING, SHIPPING

and Firms are Arranged Alphabetically

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COMPLETE WAREHOUSING AND POOL CAR  
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WAB 5-2267 ALLIED DISTRIBUTION INC. FLS 4-6091

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Established 1931

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The Hub of the Greatest U. S.  
Market Within a 200 Mile Radius  
90% of the U. S. Population.



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service to many of the nation's leading concerns.  
A modern Warehouse Service with space running  
over 125,000 square feet.

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Represented by American Chain of Warehouses, Inc.

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### Merchandise and Household Goods STORAGE and DISTRIBUTION

Modern Concrete Warehouse, 100,000 Square Feet of Storage Space.  
Private Tracks Connecting with All Railroad and Steamship Lines.  
Motor Truck Service. Low Insurance Rates.

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16 HASSELL ST., CHARLESTON, S. C.  
Telephone 2-2918 Member of A.C.W., A.W.A., May, W.A.

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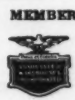
Distribution Center of South Carolina

### CAROLINA BONDED STORAGE CO.

Est. 1928

General merchandise and household  
goods storage.

Pool Car Distribution. Private rail sid-  
ings. Sprinkler equipped warehouse.



## CHATTANOOGA, TENN.

Telephone 5-3655

### Chattanooga Warehouse & Cold Storage Co.

1208 King Street, Chattanooga 2, Tenn.

Merchandise and Cold Storage

Pool Car Distribution—In-Transit Storage

Member of AWA—American Chain of Warehouses

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W. H. DEARING, President

### POSTON WAREHOUSES, INC.

ESTABLISHED 1894

671 to 679 South Main St., Memphis 3  
Insurance Rate \$1.20 per \$1,000 per Annum Distribution a Specialty  
Merchandise storage, dependable service, free switching. Local cartage  
delivery. Illinois Central and Cotton Belt Railway tracks. Automatic  
sprinkler. A.D.T. watchmen.

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### COMPLETE WAREHOUSE FACILITIES

for the proper Storage  
and Distribution of your  
Merchandise in the Memphis trade area.

### POOL CAR DISTRIBUTION

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NEW YORK OFFICE, 250 Park Avenue



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Owned and Operated by the ST. LOUIS TERMINAL WAREHOUSE CO., ST. LOUIS, MO.

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### UNITED WAREHOUSE & TERMINAL CORP.

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Storage (Mds.)—Pool Car Distribution—Local delivery service—Office  
Space. In the heart of the wholesale district and convenient to Rail,  
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Ill. Central, St. L. & S.W. RR. Consume shipments via any RR. Pool car distribution.  
Branch office facilities.

Member of Southeastern Assoc.

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Reliable Service Since 1903

### BOND, CHADWELL CO. MERCHANDISE WAREHOUSING

Distribution and Trucking

Heavy Machinery Moving

Household Goods Storage and Moving

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Members of

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Association • Allied Van Lines, Inc. • National  
Furniture Warehousemen's Association

## NASHVILLE, TENN.

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MERCANTILE AND HOUSEHOLD STORAGE

WAREHOUSE STOCK and POOL CAR DISTRIBUTION

Automatic Sprinkler System—Centrally Located

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## Within the Law

(Continued from Page 84)

operated by its servant over whom it retained complete control. The rule of the Commission cannot change the facts. It would be strange indeed if the respondent (carrier) by violating the rule of the Commission could by such violation change its relation to the employee and make such employee the servant of the construction company (consignee) without the consent of the servant either expressed or implied."

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was discussed in *W— v. PSC*, 178 Atl. 157.

The facts of this case are that a trucking company engaged in interstate transportation business accepted hauling business which appeared at first hand to be intra-state business. The court said:

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Parker Answers  
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In Letters to the Editor



and Firms are Arranged Alphabetically

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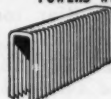
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- ▶ **Hydraulic Service Brakes.**
- ▶ **Combination Ball-Bearing Worm & Nut Type Steering.**
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